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TULSA, OKLAHOMA

Condensed Statement as of September 30, 1932

RESOURCES

Loans and Discounts		$ 15,682,876.65
Overdrafts		244.48
Bank Building Equity		3,116,000.00
Other Real Estate		167,245.40
Federal Reserve Bank Stock		99,000.00
United States Bonds and Securities	$ 3,842,147.78	
Other Bonds and Securities	7,314,769.97	
Cash and Sight Exchange	8,739,005.80	19,895,923.55
TOTAL		$ 38,961,290.08

LIABILITIES

Capital	$ 3,000,000,00
Surplus	300,000.00
Undivided Profits	304,232.41
Reserves	307,641.24
Circulation	625,000.00
Deposits	34,424,416.43
TOTAL	$ 38,961,290.08

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Higher Prices, Compensating Producers for Less Production, Is Constructive, New Policy

By ANDREW M. ROWLEY

CRUDE oil price increases announced early this week to be effective in the Mid-Continent and Gulf Coastal areas on October 15 constitute a most constructive step on the part of oil companies involved. If this policy of paying higher prices when crude oil production was curtailed had been made an integral part of the program when proration was inaugurated and recommended as a stabilizer of conditions within the industry, less trouble would have been experienced and very few operators would have opposed proration.

A large majority of crude oil producers has always done everything asked of them in the matter of curtailing their production to limits deemed necessary to stabilize conditions. It is no more than fair and just that they be paid higher prices for less production in order that their income be maintained at a level which will permit them to continue in business. Whenever a further cut in crude oil production is deemed necessary, the price schedule should be advanced to compensate the producer for the less quantity of his production offered to markets.

Higher prices, announced in advance of the date on which the new curtailment program becomes effective in Texas, will assure producers in that area the purchasing companies have their interest at heart and will go a long way toward eliminating any opposition to this further proration. These better prices will help make effective the new orders of the Texas Railroad Commission and will make most operators think twice before they actively oppose the new orders.

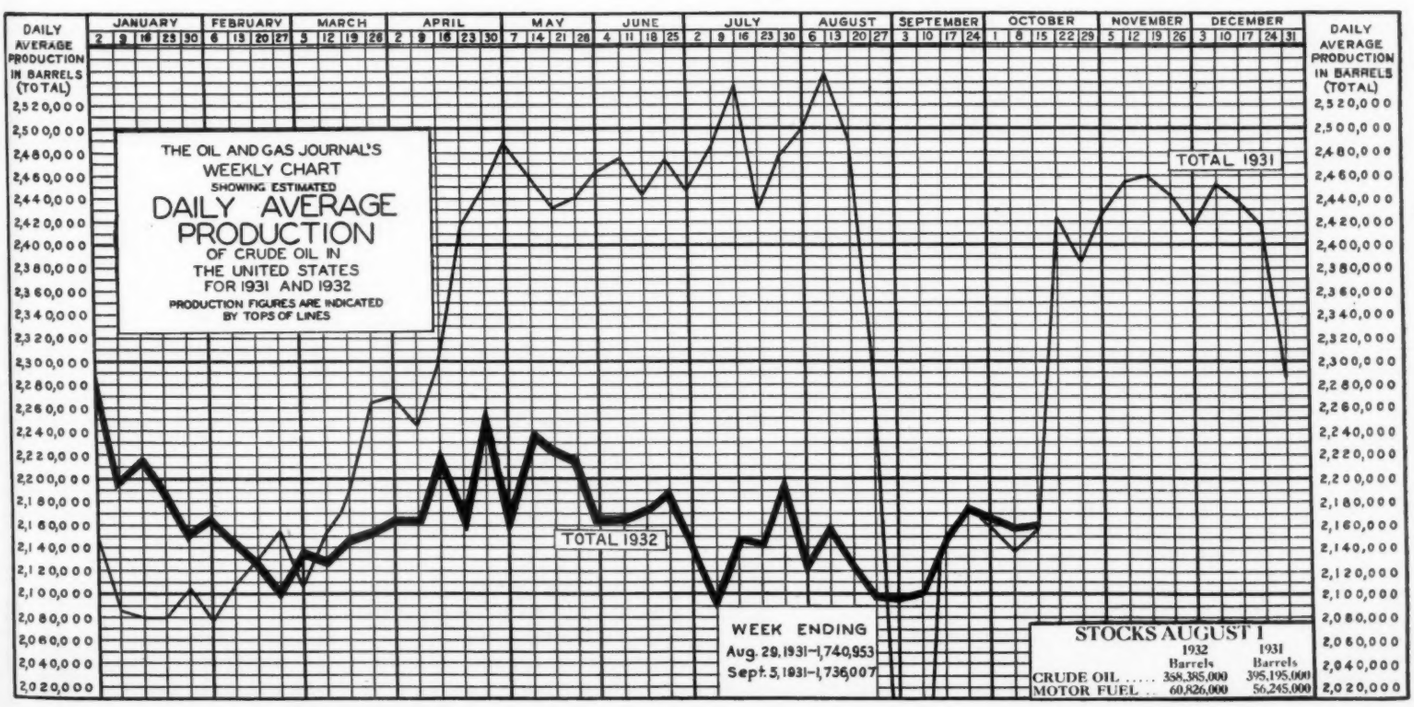
It is of the utmost importance now that the new orders of the Texas Railroad Commission be enforced and made effective and that every effort be continued to eliminate as much as possible the stealing of oil in East Texas. The Texas Railroad Commission deserves credit for its action this week and operators in every field affected should co-operate with the commission to the fullest extent to the end that production be held to the limits prescribed. While the new orders may seem unjust to some operators, there is no question they will benefit the industry as a whole while the better prices will more than compensate in most instances for the lessened output.

Crude Oil Production in the United States

Estimated daily average production for the week ending October 8, and a comparison with previous week and one year ago, follows:

	Oct. 8	Oct. 1	Oct. 10, 1931
Oklahoma—			
Oklahoma City	69,640	70,455	1,890
Seminole-St. Louis	114,320	109,260	54,415
Remainder of State	196,955	206,405	194,830
Total Oklahoma	380,915	386,120	251,135
East Texas—			
Lathrop	140,953	146,105	104,901
Kilgore	114,895	112,541	155,482
Joiner	129,310	120,562	143,501
Total East Texas	394,158	379,208	403,884
West Texas	169,987	170,327	203,793
North Central Texas	73,705	73,643	78,434
Texas Panhandle	41,716	44,010	64,536
East Central Texas	54,236	52,051	57,735
Gulf Coast Texas	134,222	137,212	119,840
Southwest Texas	57,948	58,936	61,046
Total State of Texas	925,972	915,387	989,228
Kansas	99,540	99,915	107,415
North Louisiana	30,415	30,100	28,375
Gulf Coast Louisiana	33,761	33,586	26,404
Arkansas	34,025	34,395	37,490
Eastern fields	115,000	114,000	118,000
Rocky Mountain area	73,761	72,197	92,427
California—			
Santa Fe Springs	58,000	59,750	60,500
Long Beach	68,000	71,500	76,500
Playa Del Rey	15,500	14,250	21,250
Elwood	13,500	13,750	25,000
Kettleman Hills	58,750	59,000	60,500
Remainder of State	257,000	256,750	261,250
Total California	470,750	475,000	505,000
Total United States	2,164,139	2,160,700	2,155,514

Increase 3,439 Bbls. Daily



Mid-Continent Refiners Curtailing Operations in October to Improve Their Market Position

By W. T. ZIEGENHAIN

Mid-Continent refiners are curtailing their October operations to conform to the seasonal falling-off in the demand for gasoline. In doing so they are making a strong bid to place prices on a profitable basis. During October an average of 401,995 bbls. daily has been established as the total crude runs for the area compared with 430,430 bbls. during September of this year and 472,190 bbls. in October a year ago. This represents a decrease of approximately 28,000 bbls. daily compared with last month and about 70,000 bbls. compared with a year ago.

The runs in all states have been reduced in the past month but Oklahoma accounts for more than half of the total decrease. North Central Texas also showed a substantial decrease while smaller decreases are shown for Kansas, North Louisiana, East Texas, West Texas and Arkansas in the order named. Along with the curtailing of daily refinery operations several companies have adopted the practice of shutting down their plants over a part of the month, or in a few cases where the same company operates several plants, one of them has been shut down for the month.

A number of construction jobs are in progress, most of which have to do with increasing the capacity or intensity of cracking in order to make motor fuels of higher antiknock value. Three new plants are also under construction.

Mid-Continent Refinery Operations

Crude Runs to Stills

	1929	1930	1931	1932
January 1	508,550	535,460	478,795	405,910
February 1	506,800	519,355	470,125	411,280
March 1	514,950	531,500	449,634	401,155
April 1	530,530	555,250	497,391	419,750
May 1	577,500	574,300	510,640	436,160
June 1	583,030	572,250	567,915	440,765
July 1	565,800	548,475	588,840	433,255
August 1	555,250	526,400	590,545	427,710
September 1	552,300	498,710	588,105	430,430
October 1	544,720	518,800	472,190	401,995
November 1	545,473	506,700	480,440	.....
December 1	540,630	478,360	456,525	.....

Operations by Districts

	October		Sept.	October
	Dy. crude capacity (bbls.)	Dy. crude runs (bbls.)	Dy. crude runs (bbls.)	daily decrease (bbls.)
Arkansas	48,000	20,150	21,000	850
Kansas	153,500	76,900	79,400	2,500
North Louisiana	41,000	25,950	27,250	1,300
Oklahoma	309,700	133,200	147,850	14,650
North Central Texas	204,800	89,750	97,030	7,280
West Texas	141,400	35,050	35,950	900
East Texas	79,200	20,995	21,950	955
Total	978,600	401,995	430,430	28,435

Oklahoma

Oklahoma refinery operations in October call for running 133,200 bbls. of crude daily compared with 147,850 bbls. in September. This decrease of nearly 15,000 bbls. is accounted for by a general curtailing of operations, as well as having four plants temporarily shut down.

The plants added to those which will be idle in October include those of Barnsdall Refineries, Inc., at Okmulgee, the Capital City Refining Co. at Oklahoma City, Gulf States Oil Corp. also at Oklahoma City and the Marathon Oil Co. at Boynton.

The Sterling Refining Co.'s plant at Oklahoma City will be down for the first two weeks of October to enable the company to make repairs and add tankage which was destroyed by fire. The damage was slight. The Pure Oil Co. will operate its Ardmore refinery but two weeks during the month and the Wilcox Oil & Gas Co. will temporarily shut down its plant at Bristow on October 15.

This program of curtailing runs is designed to not only cut production but also to enable the reduction of stocks. This move is intended to place all refiners in a better position to combat price declines from time to time over the coming winter months should distress material again make its appearance.

North Central Texas

The North Texas group of refiners will run 89,750 bbls. daily this month compared with 97,030 bbls. in September. As in the case of Oklahoma, this reduction is the result of a general curtailing of operations and is not due to a material reduction in any one plant. There were no plants added to the list of those idle, but North Texas already has a large number of plants shut down. One new plant is under construction, namely that of the Red Ball Refining Co., which company was recently organized by the Danciger brothers. The same interest also own the Petroleum Refractionating Co.'s plant at Pampa. The Red Ball plant will be located adjacent to the Petroleum Refractionating refinery and the operation of the two plants will be correlated. A combination unit of 3,000 bbls. capacity is now under construction on the Red Ball site.

The Phillips Petroleum Co. will soon complete the construction work on its new cracking unit at the Border plant. This unit is expected to be ready to operate late in October.

East Texas

The East Texas group of refiners also reduced their runs slightly for October. This reduction came in the face of two additional plants and despite the fact that crude has been more generally available. Other compensating factors have operated to counteract these changes and probably account for the relatively slight change. A fire at the East Texas Refining Co.'s plant at Longview has caused a partial rebuilding of the cracking unit. This has caused the company to suspend practically all operations for the time being. Resumption of a normal schedule is expected in the early part of November.

A fire also destroyed the Gladewater Refining Co.'s plant at Gladewater but this will be rebuilt immediately and preliminary work on designing a skimming unit has been completed.

The two new names to appear in the East Texas group of plants are those of the Johnsonville Refining Co. and the Alamo Refining Co. The Johnsonville plant is a new one of 200-bbl. capacity located at Omega. The Alamo plant is that formerly known as the Slack Petroleum Co. refinery and is located at Camps Switch.

West Texas

The West Texas group of refiners also reduced their crude runs slightly. Total runs for that area have remained comparatively low for the greater part of this year. The present total of 35,050 bbls. daily compares with 35,950 bbls. in September. The reduction is accounted for principally by the shutting down of the Burford Oil Co. plant at Pecos.

North Louisiana and Arkansas

The North Louisiana group of refiners reduced their runs 1,300 bbls. daily in October while the Arkansas plants will run 850 bbls. less oil. There were no changes in the operations of the individual plants except the general curtailment of crude runs.

Kansas

Kansas refiners are running 2,500 bbls. less crude this month than in September and the decrease is brought about through a general curtailment plan. The new Globe Refining Co. plant now under construction at McPherson is expected to be in operation by February 1. Work is nearing completion on the combination unit of the Phillips Petroleum Co. in its Kansas City plant and the unit is expected to be in operation within the next 45 days.

REFINERY OPERATIONS IN KANSAS

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs October	Runs Sept.
Altitude Petroleum Corp., Chanute	5,000	(†)	(†)
Barnsdall Refineries, Inc., Wichita	4,000	2,000	2,000
Derby Oil Co., Wichita	7,500	4,000	4,000
Eldorado Refining Co., Eldorado	4,500	3,000	3,000
Golden Rule Refining Co., Wichita	1,500	900	900
Kanotex Refining Co., Arkansas City	12,000	4,500	6,000
National Refining Co., Coffeyville	6,500	5,000	5,000
Phillips Petroleum Co., Kansas City	7,500	6,500	6,000
Shell Petroleum Corp., Arkansas City	22,000	10,000	10,000
Sinclair Refining Co., Coffeyville	12,000	10,000	11,000
Sinclair Refining Co., Argentine	9,500	(*)	(*)
Skelly Oil Co., Eldorado	23,000	10,500	11,000
Standard Oil Co. of Kansas, Neodesha	20,000	6,000	6,000
Vickers Petroleum Co., Potwin	3,500	2,000	2,000
White Eagle Oil Corp., Augusta	15,000	12,500	12,500
Total	158,500	76,900	79,400

*Shut down. †Operating cracking stills.

REFINERY OPERATIONS IN NORTH LOUISIANA

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs October	Runs Sept.
Bayou State Refining Co., Houston	750	200	250
Cedar Grove Refining Co., Shreveport	750	750	500
Louisiana Oil Refining Co., Shreveport, Bossier	19,000	17,000	18,000
Spartan Refining Co., Shreveport	10,000	6,000	6,000
Stanolind Oil & Gas Co., Superior	3,500	2,000	2,500
The Texas Company, Shreveport	7,000	(*)	(*)
Total	41,000	25,950	27,250

*Shut down.

REFINERY OPERATIONS IN WEST TEXAS

(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs October	Runs Sept.
Bluebonnett Oil Refining Co., Wickett	5,000	100	(*)
Bobrose Oil & Refineries, Luling	2,500	(*)	(*)
Burford Oil Co., Pecos City	6,000	(*)	3,000
Coltex Refining Co., Colorado	10,000	5,400	6,200
Concho Refining Co., San Angelo	500	300	200
Cosden Oil Co., Big Spring	15,000	5,100	4,000
Grayburg Oil Co., San Antonio	6,000	500	700
Great West Refining Co., Big Spring	8,500	(*)	(*)
Gulf Refining Co., Sweetwater	5,000	3,000	3,000
Howard County Refining Co.	2,500	(*)	(*)
Humble Oil & Refining Co., San Antonio	5,000	1,300	1,600
Humble Oil & Refining Co., McCamey	15,000	(*)	(*)
Magnolia Petroleum Co., Luling	7,000	6,000	3,500
Marathon Oil Co., Del Rio	5,000	1,500	1,600
Misko Refineries, Inc., Laredo	1,500	850	850
Octane Refining Co., Beard	2,000	1,000	1,000
Paramount Refining Co., San Angelo	1,500	500	500
Pasotex Petroleum Co., El Paso	14,000	3,000	3,000
Phoenix Refining Co., Pettus	800	600	600
Pioneer Oil & Refining Co., Somerset	1,500	600	800
Richardson Refining Co., Big Spring	6,000	(*)	(*)
Rio Grande Oil Co., El Paso	6,000	800	800
Signal Gasoline Co., Texon	500	(*)	(*)
The Texas Company, San Antonio	3,000	2,500	2,500
The Texas Company, El Paso	2,000	800	900
Tonkawa Petroleum Co., Pyote	5,000	(*)	(*)
Texas Mexican Oil & Refining Co., Laredo	600	400	400
Texas Petroleum Products Co., Somerset	1,500	400	400
Wickett Refining Co., Wickett	2,500	400	400
Total	141,900	35,050	35,950

*Shut down.

(Continued on Page 31)

Price Increases Follow Reduction in Allowable Production in Texas and Oklahoma Fields

By JAMES McINTYRE

The Sun Oil Co., with a 40,000-bbl. refinery in Marcus Hook, Pa., a 12,000-bbl. plant in Toledo, Ohio, and a 6,000-bbl. plant in Yale, Okla., was the leader in this week's upward movement in the price of crude oil in the Mid-Continent Field when it announced that effective Saturday, October 15, it would pay $1.10 for East Texas crude oil and would increase its price 10 cents per barrel in the Gulf Coast fields in which it is a purchaser. The Sun Oil Co.'s announcement closely followed the order of the Texas Railroad Commission providing for a reduction of the allowable production in Texas to 804,798 bbls per day effective October 15, including a cut of 40,000 bbls. per day in the allowable for East Texas.

On the same day the Texas Railroad Commission acted, the Oklahoma Corporation Commission revised the allowable production of Oklahoma downward and Commissioner Thurman Hill of the Kansas Public Service Commission gave out a statement in which he said that the Kansas commission would soon act on the question of lowering the allowable for that State.

Sinclair Prairie's New Prices

The Sun Oil Co.'s statement was made public late Monday evening, and on the following day, Tuesday, October 11, the Sinclair Prairie Oil Marketing Co. met the Sun Oil Co.'s prices in East Texas and took the lead in announcing a 12-cent increase in all grades in Kansas, Oklahoma and East Central Texas, North Texas and Central Texas (sometimes known respectively as the Mexia, Wichita Falls and Ranger districts), to become effective Saturday, October 15.

The Sinclair Prairie Oil Co. announced that it would meet the Sun Oil Co.'s 10-cent increase in the Gulf Coast fields, effective October 15.

The new prices will bring the price of East Texas oil to $1.10 per barrel flat, and will raise the prices in Kansas, Oklahoma and North Central Texas, as follows: Below 29 gravity, 88 cents; 29 gravity, 90 cents, with 2 cents added for each full degree upward to 40 degrees and over, which will be $1.12 per barrel.

The Barnsdall Refineries, Inc., met the Sinclair Prairie prices in Kansas and Oklahoma. It does not purchase oil in Texas. The Barnsdall company's new schedule will also become effective next Saturday.

Phillips Leads in Panhandle

The Phillips Petroleum Co., through its Panhandle crude oil purchasing company, the Phil Tex Oil Co., led the way in advancing Texas Panhandle crude oil prices. On Tuesday it announced that effective Saturday, October 15, it would raise its prices in Hutchinson, Carson and Moore Counties 9 cents per barrel, and in Gray County 11 cents per barrel. At the same time the Standish Oil Co., the Phillips Petroleum Co.'s oil purchaser in Kansas and Oklahoma, met the Sinclair Prairie Oil Marketing Co.'s 12-cent increase in those states, also effective October 15.

The new East Texas price will yield the producers in that field a little more money than they have been getting, even though their allowable production will be cut 40,000 bbls. a day. A production of 375,000 bbls. per day at 98 cents per barrel yields $367,500 per day while a production of 335,000 bbls. at $1.10 per day will yield $368,500 per day, a net increase of $1,000 per day. In addition ot that the producers are conserving 40,000 bbls. per day for future sale at, all hope, will be even a better price than $1.10 per barrel.

Oklahoma producers, granting that the new prices will be generally adopted, will benefit about $45,000 per day and Kansas producers will benefit about $12,000 per day. East Central and North Central Texas allowables have been cut, but it is safe to say that the producers will realize a net increase in natural wealth conserved for future markets together with immediate income from oil sold.

Up to the close of this review nothing had been done about West Texas, North Louisiana or Arkansas prices, but the feeling is generally held that all Mid-Continent and Gulf Coast purchasers will meet the increased prices, which will redound to the benefit also of Salt Creek, Wyo., and the Hobbs Pool in New Mexico, which follow Mid-Continent prices, Salt Creek taking the Stanolind Crude Oil Purchasing Co.'s price in Oklahoma and Kansas, and Hobbs taking the West Texas prices.

Texas Allowable Cut to 804,798 Bbls. Daily

AUSTIN, Tex., Oct. 10.—The Texas Railroad Commission today ordered a reduction in the production of 27 of the more prominent fields of the state, cutting them from their old allowable of 887,491 bbls. to 725,482 bbls., effective October 15. The reductions make the new allowable production for the whole state 804,798 bbls. per day, a reduction of about 117,000 bbls. from the estimated actual average production on October 1, but about 161,000 bbls. below the former allowable for the whole state.

The East Texas Field was cut 40,000 bbls. per day, or to a new allowable of 335,000 bbls., 40 bbls. per well per day. Two new pools in the Gulf Coast Field which if permitted to produce without restriction would soon rise to major proportions were cut down severely. Rabbs Ridge, otherwise known as Clear Lake and Thompson, was cut from its old allowable of 18,400 bbls. to 6,000 bbls. and Conroe was cut from its old allowable of 17,350 bbls. to an allowable of 4,800 bbls.

The commission placed the allowable production of the West Texas Field outside of those mentioned in the accompanying table, at 12,500 bbls. per day; the outside Southwest Texas fields at 22,450 bbls.; the outside East Central Texas fields at 6,700 bbls. and the miscellaneous Gulf Coast fields at 37,666 bbls. These figures added to the 725,482 bbls. allowed the fields designated in the table to bring the allowable production of the state to 804,798 bbls.

NEW ALLOWABLES IN CURTAILED FIELDS IN TEXAS

District—	New allowable (bbls.)	Old allowable (bbls.)	Reduction (bbls.)
Panhandle	45,000	55,000	10,000
North Texas	46,000	57,000	11,000
Central Texas	21,500	30,000	8,500
Yates	55,000	65,000	10,000
Winkler County	25,000	35,000	10,000
Howard-Glasscock	12,500	22,000	9,500
Ector	4,000	6,310	2,310
Crane-Upton	12,700	15,700	3,000
Reagan	20,000	25,000	5,000
Darst Creek	14,000	18,000	4,000
Salt Flats	7,500	10,000	2,500
Duval	5,000	7,481	2,481
Van	42,500	45,000	2,500
East Texas	335,000	375,000	40,000
Rabbs Ridge	6,000	18,400	12,400
Conroe	4,800	17,350	12,550
Raccoon Bend	4,250	6,500	2,250
Sugarland	8,000	12,000	4,000
Barbers Hill	19,108	22,500	3,392
Humble	5,125	6,000	875
Goose Creek	3,210	3,800	590
High Island	5,159	6,050	891
Hull	5,159	6,050	891
Pettus	3,822	4,500	678
Pierce Junction	4,688	5,500	812
Refugio	7,701	9,100	1,399
Spindletop	2,760	3,250	490
Total	725,482	887,491	162,009

Oklahoma Commission Lowers State Output

Allowable production in Oklahoma will be 381,790 bbls. per day for the balance of October. Of this the Class B wells in the Seminole area will be allowed 118,290 bbls. per day and Oklahoma City 72,750 bbls. The total for the State is 17,925 bbls. below the allowable for September which was 397,715 bbls. per day, but the State did not produce that much in September according to the weekly estimates which showed an average of 388,903 bbls. per day.

The allowable production divided into groups follows:

District—	Oct.	Sept.
Class A	24,864	24,652
Class B	118,290	130,488
Class C	14,700	15,707
Oklahoma City	72,750	75,720
Wildcats	1,050	800
Others	150,136	150,347
Total	381,790	397,715

The Oklahoma Corporation Commission met Monday, October 10, to consider the question of a revision of the allowable production to be effective in October. The statewide proration committee had met in Tulsa on Friday, October 7, and formulated its recommendations for the fields outside of Oklahoma City. The proration committee recommended to the Corporation Commission a production of 307,040 bbls. per day from the fields outside of Oklahoma City.

State Umpire Ray M. Collins recommended that the allowable for Class B pools be reduced to 41 per cent of their potential in November and December which would make the production of those pools about the same as in the remainder of this month.

The nominations from the Oklahoma City Field for October totaled 72,750 bbls. per day. This figure exceeds the actual pipe line runs from the field in September, which were 70,957 bbls. per day. The names and nominations of the purchasing companies in the Oklahoma City Field follow:

Company—	Oct. nom.	Sept. runs
Champlin	2,000	805
Continental	1,300	1,798
Empire Pipe Line	15,000	14,466
Globe Co.	7,000	6,918
Magnolia	2,500	2,422
Oklahoma Co.	10,000	9,792
Sunray Oil	None	412
Shell Pipe Line	2,000	1,320
Sinclair Prairie	4,000	3,451
Stanolind	17,000	15,204
Tidal Pipe Line	100	114
Anderson-Prich. Oil Corp.	100	209
York Refinery	800	542
Capital P. & R.	230	57
Century	1,000	599
Cushing Ref. & Gaso. Co.	140	143
I. T. I. O.	3,000	4,888
John H. Peacock	None	249
Petroleum Pipe Line	1,000	610
Donleon Oil	None	873
Philtex Oil	1,500	4,207
Refiners-Sterling	1,000	1,155
Major Petroleum	200	232
Eason Pipe Line	2,500	126
Gem Refining Co.	70	78
Cement Refinery	10	13
Firestone	None	75
Addition Petroleum Co.	None	199
Singleton Refinery	300	None
Total	72,750	70,957

According to E. G. Dahlgren, clerk at military headquarters in the Oklahoma City Field 759 wells are eligible for production. These wells have been given a total adjusted potential production of 3,743,010 bbls. per day. There are 120 wells in the field making water, and three of these are not producing any oil and have been stricken from the list of oil wells. Dahlgren estimated that 11 new wells would be brought to completion in the last half of the month.

Kansas Will Act Next

Thurman Hill, member of the Kansas Public Service Commission, said Monday the regulatory body was giving consideration to making a cut in the Kanas oil allowable in line with a production cut ordered in Texas and a proposed revision of proration methods in Oklahoma. The Kansas allowable now is 117,000 bbls. daily.

"It's the best news the oil industry has had for some time," Commissioner Hill said in commenting on the cut ordered in Texas and a proposed cut in Oklahoma.

Mr. Hill said Kansas would take no action until it was known definitely what Oklahoma would do. A 15 per cent reduction is being considered.

Kansas Commission's New Potential Rule

The Public Service Commission of Kansas met last week to consider the matter of potential tests in prorated fields in Kansas which are producing on a percentage basis. There had been complaint that some new wells in prorated fields had not been given a fair deal in the matter of flush production, and the commission after investigating the complaints found that in order to assure an equitable production from every well, a definite policy was necessary as to time between potentials on all wells so that all may more nearly obtain ratable production in the field. Therefore it issued the following order:

"That new wells shall take an initial potential in the same manner and for the same length of time as other new wells, and shall be counted as using this

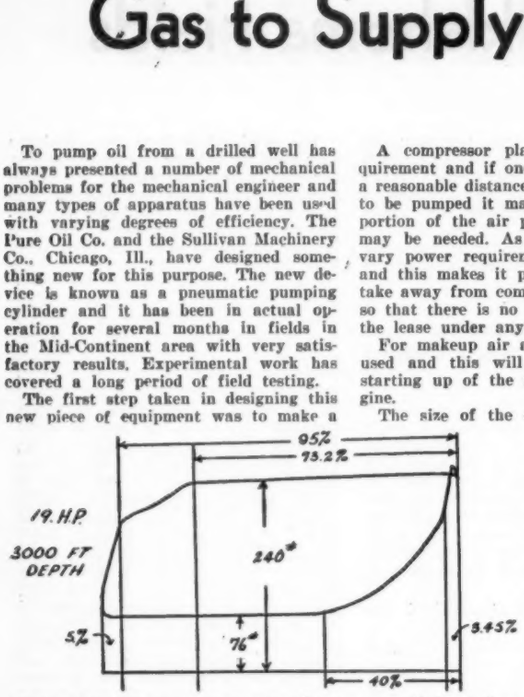
(Continued on Page 31)

New Type Equipment Uses Compressed Air or Gas to Supply Energy for Pumping Wells

By L. G. E. BIGNELL
Petroleum Engineering Editor

To pump oil from a drilled well has always presented a number of mechanical problems for the mechanical engineer and many types of apparatus have been used with varying degrees of efficiency. The Pure Oil Co. and the Sullivan Machinery Co., Chicago, Ill., have designed something new for this purpose. The new device is known as a pneumatic pumping cylinder and it has been in actual operation for several months in fields in the Mid-Continent area with very satisfactory results. Experimental work has covered a long period of field testing.

The first step taken in designing this new piece of equipment was to make a study of existing pumping outfits to find out wherein they might be improved and then to adapt the basic idea to actual field conditions to produce a unit that is suited to any type of well that is producing a reasonable amount of oil. As this is a direct lift mechanism the gas-oil ratio of the individual well does not enter into the problem and if the oil will flow to the bottom of the hole it can be lifted to the surface efficiently and economically.



Card taken from a pump operating on a well 3,000 feet deep, 20 strokes per minute, showing the expansion and compression of air in cylinder

The pumping cylinder is, as the name implies, a pneumatic cylinder operated by compressed air or gas and is suspended in a derrick directly over the wellhead and imparts to the polished rod a direct upward pull which in turn is transmitted to the working barrel at the bottom of the well. The length and number of strokes per minute are controllable over any range and it is also possible to secure a different respective rate of upward and downward movements of the rods if desired.

In this piece of equipment the cylinder is single acting and is equipped with automatic air-actuated poppet valves. On the up-stroke or pumping stroke, air is admitted to the underside of the piston at a pressure sufficient to lift the weight of the sucker rods and fluid and operate the pump at the desired speed. On the downstroke, the piston operates against a back pressure sufficient to counterbalance the weight of the rods and control their downward motion.

This back pressure is exhausted from the pump to compressor suction, reducing the horsepower required in that machine. As an example in pumping wells 2,650 feet deep, with 2½-inch tubing, the discharge pressure from the compressor was noted as 225 pounds, and the intake pressure 80 pounds per square inch. These pressures include losses due to the line friction. The horsepower requirement may be further reduced by the use of heaters located near each well. Air heated from 70° F. to 500° F. increased 81 per cent in volume. A small auxiliary compressor is used to make up such losses of air from system as may occur in the pipe lines, valves and stuffing boxes.

A compressor plant is the first requirement and if one is available within a reasonable distance of the well or wells to be pumped it may be used and such portion of the air piped to the well as may be needed. As pumping conditions vary power requirements will also vary and this makes it possible to add to or take away from compressor station units so that there is no excess equipment on the lease under any condition.

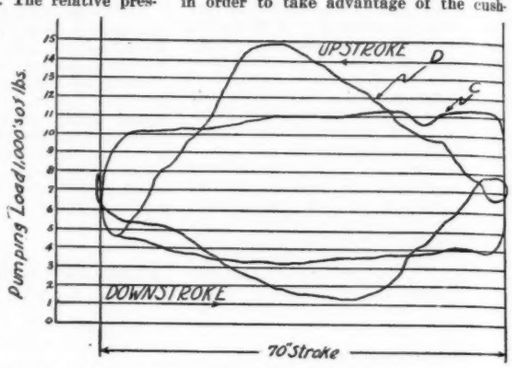
For makeup air a small unit may be used and this will also serve for the starting up of the main compressor engine.

The size of the discharge lines from the compressor station to the wells is determined by the depth and capacity of the wells to be pumped and their number and location with relation to the station and to one another. With the compressor station located in the center of a 160-acre lease drilled up in the usual way a very convenient and economically operated discharge and return system of pipes can be laid out. From the main delivery lines smaller diameter pipes are used to the individual wells, but under usual practice the line leading directly to the pumping cylinder is not less than 2 inches in diameter.

It has been found very desirable to install heating ovens near the wellhead for the purpose of heating the air before it enters the pumping cylinder, and expanding it at a constant pressure. The distance from the heater to the airhead in one installation was approximately 65 feet but this distance is variable although it is recommended that the heater be placed in reasonably close proximity to the well.

After the air has been used in the pumping cylinder for lifting the piston and operating the working barrel in the well it is discharged into return lines and conducted back to the suction side of the air compressor. The relative pressures of the air entering and leaving the pumping cylinder are given above, but they will vary with other conditions to be found at different well depths.

The pneumatic pumping cylinder consists of three major moving parts, a main piston, and two small pistons for operating the poppet inlet and discharge valves. The cylinder is usually suspended in the derrick by means of four rods attached to the crown block I-beams and supporting the cylinder in a position over the polished rod. The cylinder is tied down to the wellhead by the use of wire line and turnbuckles. For servicing the well two of the suspension rods are unhooked from the head by removal of one bolt and the cylinder swung back to one side of the derrick.



In the above chart, "D" shows dynamometer card of a well on beam and "C" shows indicator card of the same well on pneumatic pump

Speed of beam, 22½ RPM, 72-inch stroke
Speed of Pneumatic Pump, 19 strokes per minute, 70-inch stroke
Depth of pump in well, 2,853 feet
Barrels pumped with Pneumatic Pump, 810 per day
Barrels pumped on beam, 660 per day
Maximum load on card "D" shows 14,800 lbs., with unit rod stress of 33,500 lbs.
Maximum load on card "C" shows 11,340 lbs. with unit rod stress of 25,600 lbs.

Pump Cylinder Operation

The admission and exhaust valves in the pumping cylinder are controlled from ports in the main cylinder. In normal operation the admission valve is timed to close somewhat before the piston reaches the top of its upward stroke, in order to take advantage of the expansive power of the air and the momentum of the moving parts. The exhaust valve is also timed to close before the piston reaches the bottom of its downward stroke in order to take advantage of the cushioning effect of compressed air to bring the moving parts to a gentle stop without shock or jar and eliminate clearance losses. A series of these cut-offs and compression ports are provided in the cylinder, so that the amount of cut-off and compression can be readily adjusted by selecting the proper port to suit any particular conditions of load and speed.

It is sometimes desirable to operate the pump at such extremely slow speeds that advantages to be obtained by cut-off and compression are negligible.

The arrangement is such that the valves are always interlocked by pressure conditions, so that the exhaust valve cannot open before the admission valve is closed on the upstroke, nor can the admission valve open before the exhaust valve is closed on the downstroke.

The pumping cylinder is provided with safety features to take care of any contingencies which may arise. In the event of sucker rod breakage, a long cushion chamber at the top end of the cylinder prevents damage to the equipment. The effectiveness of this cushion chamber is increased by means of a valveless bypass arrangement which admits air at operating pressure to the cushion chamber whenever the piston passes above its normal upward limit of travel.

Special automatic shutoff valves are placed in the air supply and return lines to each pumping cylinder. These valves are adjusted to permit any normal flow of air to the pump which is required for its operation. Under abnormal conditions, however, such as might be caused by sucker rod breakage, broken air supply pipe, or return line, or by any derangement of the valve mechanism such as sticking valves or broken valves or springs, the automatic valve acts to shut off the air supply. Thus, when several pumps are operating on the same system, if any difficulty should occur with one pump, that pump would automatically

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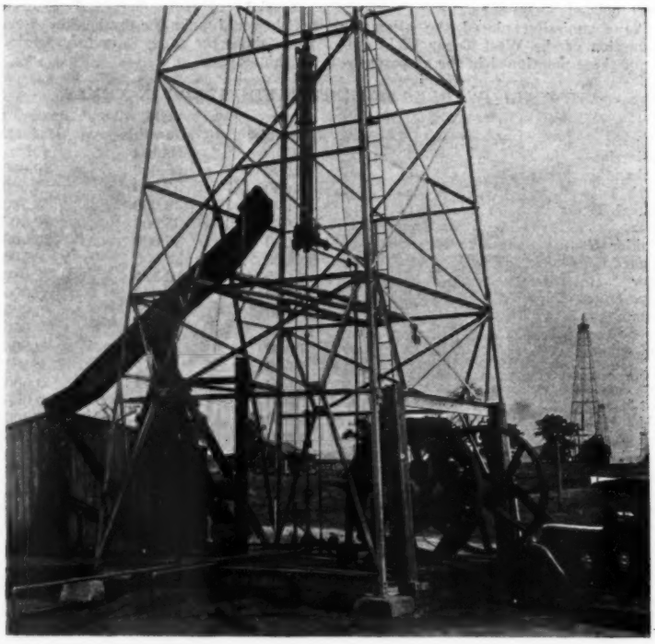

Pneumatic pumping cylinders installed on wells in the Oilton Field, Okla.

Program for Institute Meeting at Houston, Texas, Includes Forty Important Technical Papers

Oil men who attend the thirteenth annual meeting of the American Petroleum Institute at Houston, Tex., November 15, 16 and 17, will have the benefits of a short intensive course of instruction in the technical and practical problems of producing, refining and marketing petroleum and its products. The tentative program prepared by W. R. Boyd, Jr., executive vice president of the Institute, and the secretaries of the Divisions of Production, Refining and Marketing provides time for no less than 40 technical papers to be presented before the division groups in addition to three general sessions at which men prominent in industrial and economic affairs will be heard. Sir John Cadman, chairman of the board of the Anglo-Persian Oil Co., Ltd., will come here from London to be the guest of the Institute.

Activities in Houston will begin on Saturday, November 12, when the first 2 of more than 40 committee meetings will be held. Members of the statistical subcommittee on refinery statistics and economics, who are engaged in preparing an estimate of likely consumption of motor fuels during the six months beginning October 1, will adjourn their New York sessions and begin a final drafting of their report on that day. The committee headed by Albert J. McIntosh will report to the main committee presided over by D. J. Moran on Monday. The subcommittee on unfired pressure vessels of the committee on standardization of refinery equipment likewise will meet on Saturday.

The Institute's statistical subcommittee has been at work for several weeks and has worked out a new plan to be recommended to the main committee under which forecasts will be made for six month periods instead of nine months, as has been the custom for the past two years. It is contemplated also that provision shall be made for quarterly revision of the figures so that a continuous study will be made of the elements governing consumption demand for motor fuels.

The economic forecast will be presented by Mr. McIntosh before the first general session of the meeting in the Rice Hotel on Tuesday morning, at which time Mr. Beaty will deliver the president's address and Dr. John W. Frey, of the Bureau of Foreign and Domestic Commerce, will present the results of a study of the economic outlook made for the Federal Oil Conservation Board by a committee of five oil economists headed by Doctor Frey.

Program Thirteenth Annual Meeting, American Petroleum Institute, Rice Hotel, Houston, Texas, November 15, 16 and 17

TUESDAY, NOVEMBER 15

10:30 a.m.

Meeting of Board of Councillors (Banquet Room No. 1):
To nominate candidates for election as members of the Board of Directors.

2 p.m.

General Session (Ball Room):
The President's Address, Amos L. Beaty, American Petroleum Institute.
Report of Board of Councillors and election of Directors.
The Economic Forecast, Albert J. McIntosh, Standard Oil Co. of New York (for the Institute's Committee on Refinery Statistics and Economics).
John W. Frey, Bureau of Foreign and Domestic Commerce (for the Federal Oil Conservation Board).

8 p.m.

GROUP SESSIONS—DIVISION OF PRODUCTION

Well Spacing (Private Dining Room C):
(Sponsored by the Central Committee on Drilling and Production Practice.)
Presiding: Fred E. Wood, Standard Oil Co. (Indiana). (Open meeting of the Topical Committee on Well Spacing.)
Well Spacing for Water Flood, K. B. Nowels, Forest Oil Corp.
Effect of Additional Wells on Ultimate Yield, J. J. Zorichak, Midwest Refining Co.
General Discussion.
(After papers have been presented, general discussion from the floor will follow.)

DIVISION OF REFINING

Refinery Maintenance (Banquet Room No. 1):
Inspection of Refinery Equipment, T. B. Tifft, Sinclair Refining Co.
Corrosion of Oil Tankers, N. B. Musser, Sun Oil Co.
Prevention of Corrosion in Low-Pressure Equipment, Brian Mead, Humble Oil & Refining Co.
Refinery "Gadgets":
Thread Gauge for Taking Internal Thread Tapers, F. B. Gilliams, The Atlantic Refining Co.
Replacing Corroded Lower Section of Riveted Tower Shell Without Removing Tower From Its Location, ————, The Atlantic Refining Co.
Continuous Acid Treating of Light Oils in the Laboratory, E. R. Lederer, Texas Pacific Coal & Oil Co.

WEDNESDAY, NOVEMBER 16

9:30 a.m.

GROUP SESSIONS—DIVISION OF PRODUCTION

Symposium on Well Spacing (Banquet Room No. 1):
(Sponsored by the Central Committee on Drilling and Production Practice.)
Presiding: Fred E. Wood, Standard Oil Co. (Indiana).
Hydrodynamics of Reservoir Drainage and Its Relation to Well Spacing, H. D. Wilde, Jr., and T. V. Moore, Humble Oil & Refining Co.
Comparative Yields in California Fields With Various Well Spacings, A. S. Hayes, General Petroleum Corp. of California.
Well Spacing in the Oklahoma City Field, Donald R. Knowlton, Phillips Petroleum Co.

10 a.m.

JOINT SESSION—DIVISIONS OF REFINING AND MARKETING

Economic Outlets for Petroleum Products (Ball Room):
Economic Outlets for Natural Gasoline and Liquefied Petroleum Gases, G. G. Oberfell, Phillips Petroleum Co.
Economic Development of Furnace Oil and Effect on Burner Design, S. B. Eckert and A. E. Pew, Jr., Sun Oil Co.
Uses of Fuel Oil, R. T. Haslam, The Standard Oil Development Co.
Uses of Petroleum Coke as Boiler-Plant Fuel, O. F. Campbell, Sinclair Refining Co.

2 p.m.

GENERAL SESSION

General Session (Ball Room):
Address, Henry I. Harriman, Chamber of Commerce of the United States.
Address, Sir John Cadman, Anglo-Persian Oil Co., Ltd.

8 p.m.

GENERAL SESSION

Production Problems (Ball Room):
Presiding: Charles F. Roeser, Roeser & Pendleton, Inc.
The Current Production Situation, Charles F. Roeser, Chairman, Division of Production.
Special Exhibit Program:
Efficient Use of Water Drive.
Efficient Utilization of Energy and Free Gas Cap.
(Demonstration by special working models, followed by motion pictures illustrating efficient and inefficient use of water drive and use of gas in free gas cap.)

THURSDAY, NOVEMBER 17

9:30 a.m.

GROUP SESSIONS—DIVISION OF PRODUCTION

Drilling and Production Practice (Ball Room):
(Sponsored by the Central Committee on Drilling and Production Practice.)
Presiding: H. N. Marsh, General Petroleum Corp. of California.
Importance of Free-Gas Control in Maximum Oil Recovery, J. R. McWilliams, Skelly Oil Co.
Practical Benefits of Pressure Maintenance Demonstrated by Institute Research, William N. Lacey, California Institute of Technology.
Pressure Maintenance in East Texas, John A. Ritter, Sun Oil Co.
Report of Division's Nominating Committee, Dana H. Kelsey, Sinclair Prairie Oil Co.
Election of 20 members of the General Committee of the Division of Production.

10 a.m.

DIVISION OF REFINING

New Developments of Interest to Petroleum Refiners (Banquet Room No. 1):
Nitrobenzene Process for Lubricating Oils, F. W. Ferris and W. F. Houghton, The Atlantic Refining Co.
Modern Trend in High-Temperature Alloys, F. N. Speller, The National Tube Co.
The Problems of Extreme-Pressure Lubricants, O. C. Bridgeman, U. S. Bureau of Standards.
Extreme-Pressure Lubricants: Correlation of Service Data With Laboratory Testing Methods, H. R. Wolf and H. C. Mougey, General Motors Corp.
Report of Division's Nominating Committee, T. G. Delbridge, The Atlantic Refining Co., Chairman.
Election of 20 members of the General Committee of the Division of Refining.

DIVISION OF MARKETING

Marketing Problems (Private Dining Room A):
Presiding: W. T. Holliday, Standard Oil Co. of Ohio.
Sane Economics in the Marketing of Petroleum Products, H. T. Ashton, Lubrite Refining Co.
Effect of Improper Use of Credits in the Oil Industry, C. E. Votrian, Barnsdall Refineries, Inc.
Report of Division's Nominating Committee, Roy B. Jones, Panhandle Producing & Refining Co., Chairman.
Election of 20 members of the General Committee of the Division of Marketing.

2 p.m.

DIVISION OF PRODUCTION

Drilling and Production Practice (Ball Room):
(Sponsored by the Central Committee on Drilling and Production Practice.)
Presiding: W. W. Scott, Humble Oil & Refining Co.
Tapered Tubing, John T. Hayward, Barnsdall Oil Co.
Selection and Rating of Pumping Units, Bowman Thomas, Humble Oil & Refining Co.
Subsurface Economies in Drilling Practice, Bruce Barkis, Rio Grande Oil Co., with Ralph D. Copley, Standard Oil Co. of California, co-operating.
Recent Developments in Drilling Technique and Practice, K. A. Covell, Indian Territory Illuminating Oil Co.
Deep Well Completion Practice in Reagan County, Texas, E. V. Foran, Consulting Engineer.

DIVISION OF REFINING

Gasoline and Lubricating Oil (Banquet Room No. 1):
The Prediction of Vapor Lock in Automobile Engines, O. C. Bridgeman, H. S. White and F. B. Gary, U. S. Bureau of Standards.
Correlation of Road Performance and Antiknock Ratings of Gasoline—a Report of the Detonation Subcommittee of the Co-operative Fuel Research Committee, C. B. Veal, Society of Automotive Engineers.
The Effect of Viscosity in the Region of Thin-Film Lubrication, O. C. Bridgeman, S. H. McKee and F. B. Bitner, U. S. Bureau of Standards.

DIVISION OF MARKETING

Marketing Problems (Private Dining Room A):
Presiding: W. T. Holliday, Standard Oil Co. of Ohio.
The Practical Workings of the Code, Howard A. Coffin, White Star Refining Co.
The Power to Destroy, Carl Barker, Shell Petroleum Corp.

8 p.m.

Annual Dinner (Ball Room).

Many Types of Materials Available for Use in Manufacture of Equipment for Oil Industry

By R. J. ALLEN and F. B. APPLEGATE
Worthington Pump & Machinery Corp.*

The number of types of materials, with their modifications, available for use in the manufacture of equipment for the petroleum industry is exceedingly large. Materials, like individuals, however, tend to excel in certain characteristics and be but mediocre in others. Some have good mechanical strength but are lacking in resistance to corrosion; some can be readily cast into intricate shapes but are inherently brittle, while others which are quite resistant to corrosion lack mechanical strength. As there are but few genii among humans, so the number of materials which seem to fully meet all the requirements imposed are exceedingly few.

Selection a Compromise

The selection of the most suitable material for a given application in the construction of a pump or compressor must therefore be a compromise based on the relative importance of the different factors affecting its performance and its ability to meet each one. Since all the factors cannot be accurately evaluated the decision must be based largely on experience, and as experiences vary there may rightly be honest differences of opinion as to the most suitable material for use in a given application. Although there has been no attempt made toward standardization, experience dictates the use of certain types of materials for particular applications and the differences come mostly through a consideration of the possible modifications to the type, for example, chromium iron versus the chrome-nickel type of stainless.

Material Requirements

For satisfactory performance the material used for any given purpose must have physical characteristics sufficient to withstand the stresses of service; it must be capable of being fabricated into the form required for efficient performance; it must have adequate resistance to corrosion and it must be economical for use. Materials and design are closely allied and the engineer must display considerable ingenuity in creating efficient and reliable designs with the many restrictions imposed.

Corrosion is perhaps the most disturbing factor of all because the materials best suited to resist corrosion are usually deficient in other characteristics. Porcelain, for example, has excellent resistance to most corrosive attack, but its usefulness as a material of construction, because of brittleness, is rather limited. Cast iron, on the other hand, is an excellent material of construction, but its resistance to corrosion, comparatively, is small. However, extremists of the most rabid sort may occasionally meet on common ground so the use of a surface glazed cast-iron part may in some cases be the happy solution of a difficult problem.

Performance Requirements

Although a piece of equipment may deteriorate rapidly through corrosion and ultimately wear out, it must be efficient in operation, and it must not fail through a breakage of parts. Engineers therefore must design, first, for mechanical reliability; second, for efficiency; and, finally, for long life, the latter involving both mechanical wear and corrosion.

Mechanical Reliability

If mechanical reliability were the only factor to be considered in designing, the selection of materials would be comparatively simple because of the numerous types available with properties suitable for almost any type of construction. The corresponding data which has been compiled covers their limitations under almost every conceivable form of stress.

MODIFICATIONS EFFECTED ON .30 CARBON STEEL CASTING

	As cast	Normalized	Heat-treated
Ultimate strength, p.s.i.	75,000	75,000	85,000
Yield point	37,500	42,000	37,500
Elongation, per cent	20	25	21
Reduction of area, per cent	29	44	65
Brinell hardness numeral	156	143	160
Izod, foot-pounds	17	21	44

One of the important physical characteristics of any material is its ability to withstand repeated application of or reversal of stress. The endurance or fatigue limit is the name given to the maximum or limiting stress to which a material may be subjected under an indefinite number of applications without failure. If this stress is exceeded continuously, even though over a minute area of the section, a crack will ultimately form and failure will eventually occur. This endurance limit is not only a function of the material and its condition of treatment, but also the corrosive qualities of the fluid or gas with which the part in question must contact. When parts fail through fatigue, it is usually because of a repeated localized overstress.

Some materials are inherently more resistant to fatigue than others, and this fact should be recognized in making a selection but the desirable thing, of course, is to adjust the details of design so that the possibility of overstress is reduced to a minimum. To accomplish this it is necessary to use adequate tapers or fillets at changes in section. Such details as the use of fine instead of coarse pitched threads, the insistence upon fine surface finish, and avoiding unfinished surfaces which may be seamed or badly decarburized, are equally important. Also, by developing rigidity in the structure, the tendency for flexure may be kept small. Such precautions will naturally increase the factory of safety with any given material or they may safely permit the use of a less expensive material with equally satisfactory results.

While the exact value of the stress concentration at a change in section may be difficult to calculate, its approximate magnitude can often be estimated by the photoelastic method, using transparent models and a polariscope. Under the action of polarized light, the stress distribution in a section of bakelite, for instance, may be visualized by observing the resulting color dispersion. Such a method of investigation is simple and instructive and its use will assist in the avoidance of many troubles.

The physical characteristics of many of the materials used for structural parts, particularly the ferrous ones, are affected to a marked degree by the condition of treatment to which they are subjected. This is clearly illustrated by the modifications which may be effected in a simple .30 carbon steel casting, as shown in the accompanying table.

Further modifications can be effected through the use of alloys providing the composition is adjusted to suit the section involved and the subsequent heat-treatment is properly carried out.

The properties of many materials may also be considerably modified through cold working. The effect of such an operation usually is to increase both the tensile strength and hardness and to reduce the ductility.

The properties developed in a material either through heat treatment or cold work may be upset by a subsequent reheating if the temperature is carried high enough, and this fact must be recognized both in operation and when making repairs. This is particularly true in the latter case where welding is involved. Broadly speaking, welding, unless special precautions are taken, changes the structure of a treated material back to its cast condition with a corresponding alteration of its physical properties.

Conditions of Operation

The engineer assumes a definite condition of operation when designing his equipment and selecting his materials and if he allows reasonable factors of safety, few failures, if any, should occur. If the conditions of operation are made abnormal, however, through, for instance, excessive pounding from the liquid cylinders failing to fill properly, or from water hammering in the steam end, excessive stresses will be set up which may result in failure. Such failures cannot be rightly attributed to either design or materials.

It might not be amiss to digress at this point and call attention to the desirability of checking carefully all pumping installations to see that there are no high points in the supply line which might pocket gases and restrict the flow, that the lines are of ample capacity so that the velocities are low and acceleration a minimum, that for high volatile liquids the static head is sufficient to cause the pump to fill, that water in the steam lines is properly trapped, et cetera. Such precautions will avoid many difficulties in operation.

Effect of Temperature

As most pumping and compressing equipment in the petroleum industry is operated at temperatures below 750° F., the matter of plastic flow or creep is not a serious consideration. When used at higher temperatures, however, this factor must be considered.

Efficiency

The materials selected may have an important effect on the design efficiency if they complicate the fabrication of the parts into the shapes desired. Simple sections, for instance, can be cast using almost any type of metal, but as the shapes become more intricate the tendency for shrinks and draws becomes more pronounced and hence many shapes which would be highly efficient are simply not practical to make.

Cast iron can be readily cast into very irregular shapes, whereas cast steel, which may be necessary because of the temperature and pressures involved, frequently gives trouble because of its greater shrinkage, with accompanying sponginess, during solidification. The so-called noncorrosive steels are even more difficult to cast than the simple steels and their use must be restricted to comparatively simple sections. Many designs therefore which are quite practical in cast iron are rather impractical in the highly alloyed materials and, as a result, the use of the latter may entail some sacrifice in performance.

Effect of Corrosion

Of all the factors influencing the selection of materials, corrosion is unquestionably the most difficult to evaluate. The basic laws covering the phenomena are quite positive and regular in their action, but there are so many variables which influence them that results are, as a rule, difficult to predict. The surface condition of, and the stresses in the material plus the temperature, velocity and possible impurities in the corrosive media are all quite potent in their effect, and a change in any one of them, particularly slight impurities in and concentration of the solution, may entirely alter the results obtained. Concentrated sulphuric acid, when cold, can be handled without difficulty, by ordinary irons, but, when diluted and particularly hot, the problem becomes difficult. High velocities, especially where turbulence with consequent cavitation is present, may cause a serious increase in the attack on an adjacent metal; port areas in valves are therefore much more likely to corrode than the body parts. Sound, smooth surfaces are more resistant to attack than spongy, scaled ones. A piece of chrome iron in its rolled surface condition may rust noticeably, whereas the same piece with the surface polished may be unaffected. Acid solution carrying an appreciable amount of ferrous sulphate may be inactive whereas if some of the sulphate becomes oxidized to the ferric condition, the attack on the same material may be pronounced. Solutions moving steadily along a continuous surface may be harmless, whereas the same solution entrapped in a joint or porous spot, through cell concentration, may become active. Stressed pieces usually corrode more rapidly than unstressed pieces, and, as a result, valve breakage is usually more pronounced than other parts which are not so highly stressed. Gases which can be handled without difficulty when dry may be corrosive in the presence of even a small amount of moisture. In compressing units, frequently started and stopped or with improper cooling, the resulting moisture of condensation may develop a serious corrosion problem.

The probable effect of corrosion is therefore uncertain, because of the many variables, and hence the selection of materials for a standard line of equipment for use in any industry, particularly the petroleum industry, is difficult. As a result of field experience and laboratory tests, considerable information has been developed covering the performance of different types of materials under definite conditions of operation, but, unfortunately, the conditions of operation in any two refineries are never exactly alike. Slight variations in the sulphur content of the crude, the temperature or the methods of processing may produce results which have entirely different effects on the material used. Materials which perform quite satisfactorily in one installation, therefore, may not be as satisfactory in another. Further, operating conditions cannot, as a rule, be reproduced in the laboratory, and consequently tests made under such conditions, although indicative, cannot be accepted as positive guides. Where corrosion is likely to be a prominent factor, therefore, past experience with equipment of a similar nature is unquestionably the most effective guide to use in the selection of materials.

Applications

Having considered some of the factors which influence the selection of the materials and how the material in turn affects the details of design, it would seem appropriate to consider some of the specific applications.

Cylinders

The materials used in the construction of a cylinder must have strength, the

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ability to be readily fabricated into the sections required, suitable resistance to corrosion, stability of structure under the temperature of operation and reasonably low cost. The design should provide for rigidity and there should be as few joints as possible, particularly where corrosion is a factor.

Gray cast iron, or semisteel, as it is frequently called, is the ideal production material because of the ease with which it can be fabricated into sound, intricate shapes, and its low cost. Unfortunately, however, it is inherently brittle and tends to lose its strength at comparatively low temperatures. Consequently, its use is generally limited to those applications where the pressures are low, the probability of shock is not great and the temperatures do not exceed 450° F. Although cast iron rusts rather readily in contact with liquids containing dissolved oxygen, it does stand up satisfactorily in contact with many oils. It may be readily attacked, however, by the so-called "sour" oils, particularly when the latter are hot.

High strength cast irons have been developed, both through improvements in the method of manufacture and the addition of suitable alloys, so that tensile strengths in the neighborhood of 60,000 p.s.i. are now obtainable. Their casting properties are equal to, if not better than, the ordinary gray irons. Some of these irons are made entirely from a scrap steel base, while others are the result of alloy addition, such as nickel, chromium and molybdenum, to strong semisteel mixtures. Because of the finer graphite distribution resulting from the more careful control employed, a small, but nevertheless appreciable, improvement in toughness has resulted. Because of their better characteristics these irons may be used at somewhat higher pressures for temperatures up to, say 550° F. It must be accepted as a fact, however, that all cast irons, regardless of type, are inherently brittle and their impact characteristics, compared with steel, are low. The corrosion resistance of these irons, although similar to the gray irons, are, nevertheless, somewhat better because of their denser structures.

Cast steel, as a material, because of its greater stability and toughness, is naturally suitable for use at higher temperatures and pressures than any of the cast irons. The success of the application, however, is dependent on the soundness of the castings obtained. As steel does not have a constituent, like the graphite of cast iron, to neutralize the effect of the solidification shrinkage, intricate shaped castings are liable to be spongy in some of the unsymmetrical sections. This may occur at times in spite of the most intelligent use of chills and risers by the foundry man.

Steel Castings

Steel castings operating under high temperatures and pressures may develop leaks in service even though they checked sound on the shop hydrostatic test. Such a condition is due to the opening up of an inherently spongy section by the fatigue stresses resulting from the repeated heating and cooling of service. Because of this element of uncertainty, the use of steel castings, particularly in intricate shapes, should be avoided for the higher temperatures and pressures.

The corrosion resisting characteristics of the straight carbon steels are, in general, similar to those of cast iron but, lacking the graphite protection of the latter, the steel is more likely to pit.

Pump casings, particularly of the centrifugal type, may be cast from any of a number of the noncorrosive steels. Such materials, because of their high solidification shrinkage, present a difficult foundry problem and hence simple shapes are essential if practical results are to be obtained. Closed impellers, with thin wall sections, tax the ingenuity of the foundry man to the maximum. Pattern equipment designed for cast iron cannot be used for the alloy steels if for no other reason than the difference in shrinkage allowance. This is equally true whether the steel is of the high chromium, high chromium-low nickel or high nickel-low chromium types.

The term "bronze" covers an exceedingly wide range of compositions and hence to convey any special meaning must be prefixed with an adjective indicating its type. The principal bronzes used in the manufacture of pumping equipment are the leaded, government and the aluminum types. The leaded bronzes are the easiest to cast, but they have the lowest strength. The government bronzes have intermediate strength and casting characteristics. The aluminum bronzes have excellent strength and toughness, but are difficult to cast because of their rather high solidification shrinkage. All bronzes have a low modulus of elasticity, less than half that of steel, and hence they are not as suitable for high pressures even though some may have excellent strength. Further, they cannot be operated at as high temperatures as the steels. As a class they are quite resistant to the attack of weak hydrochloric and sulphuric acids and most of their salt derivatives.

The use of aluminum bronze, with a cost intermediate between cast iron and the stainless steels, may be, however, the solution of a difficult corrosion problem. The same is true of monel metal, and some of the copper base, specially alloyed mixtures sold under brand names.

Maximum in Reliability

When the maximum in reliability is desired, forged steel billets must be used because of their assured soundness and uniform strength. Soft steel is usually employed for this purpose because of its low cost and ease with which it can be machined. The sections are left amply thick so that even a considerable wastage through corrosion will not affect the serviceability of the equipment. The making of such cylinders from the noncorrosive materials, although possible, is not overly practical because of the element of expense and the fact that ingot defects in the alloy steels do not weld up during forging as thoroughly as those in soft steel. The welding of internal defects discovered during machining is not practical.

Although not used to any great extent at the present time in cylinder construction, there is a definite tendency toward built-up welded structures for many of the frame parts for pumping and compressing equipment. The suspicion with which many engineers have regarded welding in the past is fast disappearing largely because of the excellent work done by the boiler code committee of the A.S.M.E. in standardizing procedure on pressure containers and the many highly stressed applications which have been in satisfactory service. A greater appreciation of the necessity of avoiding stress concentrations, particularly in the welds, through the development of a greater stiffness in the system has been one of the important factors responsible for the improvements made.

Castings are structurally rigid because of the necessity for liberal fillets in the corners and reasonable thickness of metal sections if shrinkage cracks and mis-runs are to be avoided in the foundry. Built-up structures, on the other hand, are made of rolled sections which, because of their strength, can be used in light weights and, the actual welding provides but small fillets so that the natural safeguards, such as exist in the casting, are lacking. However, through the suitable use of stiffening supports the stresses can be suitably distributed and reliable performance assured. The use of through bolts to relieve the weld of the direct working stresses is typical of one type of reinforcement.

Liners

Strength is not an important consideration in a liner as the piece may be substantially supported by a strong housing. The lubrication, naturally, should be as efficient as the operating conditions will permit. If the material used is of a different type than the housing, the question of expansion, under possible changes in temperature, must be considered.

There are three general conditions of service to which the liner may be subjected; first, where the medium being handled is clean and noncorrosive; second, where it carries considerable abrasive dirt, and, third, where it is corrosive in its reaction.

Cast iron is universally used for the first condition because of its good bearing characteristics and its tendency to develop a high glaze. The majority of such liners are sand cast in gray iron and have a Brinell hardness of around 180. Greater hardness may be obtained through the use of high strength irons, the addition of alloys, such as chromium and nickel, and through heat treatment. With the latter method, and light sections, the Brinell hardness may be raised to over 450. Whether or not extreme hardness is desirable is open to question as hard materials do not always glaze as satisfactorily as the softer materials. A surface which does not glaze is undoubtedly being worn.

Liners for handling liquids or gases carrying an appreciable amount of abrasive dirt should be reasonably hard and have a smooth, homogeneous surface. Such a surface is resistant to the scouring action of the dirt and does not readily spall or crumble. The piston rings or packing should have the minimum tendency to load and act as a lap. Gray cast iron, because of the graphite flakes breaking the continuity of the metal surface, is not as suitable for this class of service as some of the special steels.

Chromium plating, if properly applied, stands up well even under such severe conditions as exist in a slush pump. Nitralloy should also work well. Soft rubber rings or leather cups work well as the piston seal on such units. Neither material seems to stand up well, however, in pumps handling oils which are corrosive. The chromium spalls and the nitralloy disintegrates.

Corrosion

While the presence of abrasive dirt accelerates wear, corrosion may under suitable conditions be even more active. If the medium being handled attacks the liner material, the thin film of oxide formed each time the cylinder is filled is wiped off by the rings on the discharge stroke. Under such conditions a liner may fail very rapidly.

The bronzes, as a class, are not as suitable in liners as the ferrous materials due to their comparative softness, even when heat treated. Under some conditions, however, their use may be most satisfactory.

The noncorrosive steels, with physical characteristics comparable with the ordinary steels, do not, as a rule, make satisfactory liners. The austenitic steels, such as the 18 chromium 8 nickel type, which are inherently soft, are inclined to flow and gum up. The chromium irons, on the other hand, if suitably heat treated, tend to develop a glaze and may, where both corrosion and abrasion are present, work satisfactorily. Some of the highly alloyed, air-hardening steels may work well but their rather high cost tends to mitigate their use.

The austenitic cast irons, such as Ni-Resist, combine good resistance to the types of corrosion encountered in the petroleum industry and normal abrasive wear. They are perhaps the nearest approach to the ideal liner material available at the present time. Their corrosion resisting characteristics are quite comparable to the bronzes and their bearing characteristics are comparable with the ordinary cast irons. A common composition for such an iron is: Nickel, 15 per cent; copper, 6 per cent; chromium, 2 per cent; remainder, the constituent usually found in cast iron. Unfortunately, the coefficient of expansion of such an iron is rather high and careful consideration must be given to this fact when using it for a liner in a cast iron or steel housing.

Rods and Plungers

The conditions under which piston rods and plungers operate are similar to those imposed upon the liner in that they are positively rubbed by the packing materials and are subjected to the same corrosive attack. The mechanical requirements are quite different, however, in that the rods and plungers are more highly stressed. However, the principal problem is the one of developing satisfactory resistance to packing wear.

The resistance to wear may be developed through extreme surface hardness, such as with chromium or through a high glaze, such as may be obtained with cast iron of medium hardness. Hard materials are inherently brittle, and unless the conditions of alignment are carefully watched, they are more likely to fail through fatigue than some of the materials which are softer but tougher.

As previously mentioned, the hardness developed in most materials, either through cold work or by heat treatment, may be reduced by a subsequent reheating. The harder the material, generally speaking, the lower the temperature at which it will start to soften. It is necessay therefore that such materials be operated at temperatures below the softening point if the initial hardness is to be maintained. The only part of the plunger required to be hard is the section contacting with the packing, and this can be adequately cooled through the use of long, water-cooled boxes.

Piston rods are usually made from a strong, comparatively tough material such as a straight .40 carbon steel, or a stainless iron suitably heat-treated. The low carbon, 12 to 15 per cent chromium iron may be heat treated to a Brinell hardness of 350 and show physical properties quite comparable to an alloy steel of the SAE 3,140 type. The resistance to corrosion in this condition is quite good. The softer austenitic types of stainless steel are likely to score.

Many satisfactory plungers have been made of a carbon tool steel, heat treated to develop a surface hardness of approximately 350 Brinell. Tool steel, particularly in light sections, may be rather brittle and to overcome this tendency, without sacrificing any of the surface hardness, soft steel, carburized and hardened, may be substituted. The latter presents some manufacturing difficulty in heat treatment, because, if there is any appreciable distortion during hardening, the case may later be ground through in spots in the finishing operation. Neither type has any marked resistance to corrosion.

Nitralloy makes an excellent plunger material, providing the medium being handled is not acid in its reaction. Furthere, it is not softened by the usual operating temperatures. Its use in the petroleum industry, because of the acid tendencies of the oil, is however rather limited.

Chromium plated plungers have been used in some cases with reasonably good success, but, in general, difficulty is encountered through the chromium spalling or being forced into the softer base material through the scoring action of the packing. In the presence of acid any minute fault in the plate acts as the nucleus for a corrosion pit and subsequent flaking occurs.

Noncorrosive Steels

Plungers have been made from many of the various types of noncorrosive steels. In the hardened condition, such materials are inherently brittle and extreme care must be exercised during the machining and heat treating operation to make sure the finished pieces are free from strains. Unrelieved strains may be released under the temperature of operation with an accompanying distortion. The tight-fitting packing acts as a straightening die as the plunger moves back and forth, and if the latter is bowed the accompanying stresses set up may be sufficient to cause failure by fatigue.

Stainless steel of the cutlery type with .30/.40 carbon and 12/14 per cent chromium, heat treated to develop a surface hardness of around 400 Brinell, is one of the types which has been used with satisfactory results. Another is the high carbon, high chromium material containing some 2 per cent carbon and 12/14 per cent chromium. This material, although of but medium hardness when treated, quickly develops an extremely hard surface glaze in operation. Such materials, as the two just cited, although difficult to process in the shop, un-

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The Selection of Materials for High Pressure and High Temperature Work in Oil Refineries

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Progress in power plant and oil refining design and performance has always had as its ultimate objective increased operating efficiency and the oil industry, not perhaps as much hampered by tradition and precedent and under greater pressure and increased efficiency, has not hesitated to construct and operate equipment including valves and fittings, at temperatures as high as 1,100° F., as these progressive engineers and constructors have not feared to go to this temperature after experience and careful practical experiment.

However, progress in the art of steam station and refinery design and operation has been so rapid as to bewilder even the men who have given their whole time and thought to this work. Today's economic conditions more than ever are imposing upon us the necessity for efficiency in every phase of industrial activity and not the least important is the economical generation of steam and refining of oil.

That the economy of steam generation and refining of oil may be improved by the use of greater pressure and higher temperature, may be considered an established fact, but the realization of this economy is in no small way dependent upon efficient utilization of materials of construction. The improvements are based, namely, on increase of pressure and temperature and temperatures are restricted to the limits of the materials available for such use.

The engineer engaged in steam generation or in refinery work needs a comparatively cheap metal that will have high physical properties not greatly impaired by high temperature service. He needs a metal that is resistant to high temperature gases, and one that will hold its surface under heavy sliding pressure, so as not to suffer from abrasion due to the great velocity and pressure of gases used, and a metal to have this resistance, i.e., scaling and oxidation, must be stable at temperatures employed and be capable of resisting, for the economic life of the equipment of which it forms a part, stresses to which it will be subjected.

Complexity of Problems

The complexity of the problems involved as related to the successful design and operation has in a number of instances not been fully appreciated and the conservative attitude of engineers is reasonable in view of the limited amount of information available upon the behavior of metals under high temperature and particularly on account of the manner in which it has been presented and regarded.

The oil refinery, with its processes involving complex reactions mostly of alloy for tanks, evaporators, tubes, valves and fittings to restrain these corrosive activities from being exerted on the plant itself, either by direct contact or through other vapors.

Until recently the metals used in refinery service were cast iron, cast steel and some limited amount of bronze and brass. However, with the use of greater pressures and higher temperatures, many of the metals that formerly served the purpose are now no longer used except for unimportant service, and refineries are now in a state of transition toward the use of special metals and alloys, as had been experienced in other industries some years ago.

Special metals and alloys cannot fail to be of importance in affecting the destinies of engineering progress, and developments in this direction should be of great interest especially if noteworthy advances are to be made. In view of the developments in refinery processes now being pursued so vigorously and successfully in the direction of reactions under higher pressures and temperatures, superior-strength alloys become desirable —in fact, a necessity.

Engineers, perhaps, regret the passing of what might be called "the good old days," when the choice of the best material presented little or no difficulties as compared with the present, when selection has to be made from a number of alloys, but the progressive engineer today would feel himself sadly at a loss were he asked to do without these special alloys, which he has learned to use and upon which he is learning to place fullest reliance.

It is coming to be increasingly recognized that we are approaching, if we have not already entered, an era no longer of just "steel," but of alloy steels. In this era it is every day more evident that advantageous utilization of modern metallurgical resources for equipment is essential, if stringent requirements are to be met.

It is almost impossible to exaggerate the importance of the place that alloy steels are taking in the industrial world. The day of alloy steels has certainly arrived, and the engineer who would keep in line with the march of progress should give more than momentary consideration to the spectacular advance of certain of these alloy steels.

The importance to the purchaser of having equipment meet specified duty, and considering the manufacturer should not be bound by field conditions which cannot be expressed with certainty, especially corrosion, must be recognized by both parties and it is hoped that the engineers of both parties will soon meet on common ground so that problems of this kind may be given careful consideration, for unless the purchaser is absolutely frank in giving careful consideration to his various difficulties, he will not only do the manufacturer an injustice but he himself will be disappointed in not being able to obtain duty from equipment when actually installed and in service, involving endless delays, etc., on account of use of wrong material or design.

Matter of Selection

The selection of alloys for high pressure, high temperature service depends to a great extent on the following characteristics:

Chemical resistivity.
Creep resistance.
Thermal expansion.
Resistance to scaling and oxidation.
Resistance to wear.

To build these essential factors into equipment to operate successfully under high temperature and pressure is far more difficult than in any other branch of engineering of similar nature at ordinary temperature and unless the complexity of the problems involved as related to composition and design are fully appreciated, many processes requiring the use of such equipment will be partly or wholly unsuccessful for reason of failure to utilize the performance of which available alloys are inherently capable.

In choosing the correct rating or alloy for equipment for a given condition, especially in the high temperature region, the rating corresponding to normal operating conditions should be used, rather than the worst combination of possible extreme conditions. The simultaneous occurrences of a number of possible worst conditions is usually very remote and is one thing the safety factor can readily take care of, resulting not in serious damage, but rather in a leak or distortion of flange or body making it impossible to close a valve.

However, should the wrong material or design be used, serious trouble may occur by unequal expansion or contraction due to uneven heating or fluctuating temperature, while cracking may be caused by a particular kind of fatigue brought about by repeated thermal expansion or contraction stresses; by shrinkage in section, or by localized corrosion.

Temperature Rating

Design of equipment must be governed by the temperature rating, for elastic and plastic deformation are now of fundamental importance to the engineer and hence, if expressions as to behavior of alloys are to be established, the physical properties and the nature of the imposed strains must be first established.

There is little doubt in our minds that for temperatures below 700°, that is below which creep is appreciable, it appears that the working stress of equipment should bear some relation to the proportional limit of the steel, whereas at temperatures higher than 700° F. the maximum pressure on equipment must be based on creep characteristics.

We may now ask, "What are the properties required of a steel for high temperature service?" It is at once obvious that the primary characteristic required is the ability to carry loads continuously without appreciable deformation or at least harmful permanent deformation—the same characteristic as required in steel for use at ordinary temperature.

Now, the ability of steel to withsand stress, be it tensile, compression or shear, at ordinary temperature and continuously, is fairly indicated by the conventional short-time test, and standard steels will not usually fail under continued application of loads or stresses at ordinary temperature, which do not exceed one-quarter of their strength or one-half of their elastic limit. Thus engineers have been able to utilize test data of this sort with adequate safety.

But the relation between results of the conventional tests of steels of short duration and the capacity of the same steels to withstand stress changes markedly as the temperature of test and use increases; so much so that results of short duration tests at temperatures above 700° F. are inadequate criteria of the continuous load-carrying capacity at those temperatures.

At ordinary temperature steel flows or yields quickly if at all under applied load—so quickly that its yielding may be easily observed and measured in the usual tensile test. But at high temperature steel may flow continuously under load, but so slowly that days, months and even years are required to detect and measure it. At loads considerably below those at which in short duration tests at high temperature, it will yield perceptibly, steel will yield slowly but continuously and finally fail by rupture.

It is this fact, experienced from time to time in attempts to push operating temperature limits higher, which undoubtedly has induced conservatism among engineers with respect to high temperature conditions. This factor of ignorance was too great 15 years ago.

It is, however, our opinion no longer too great; in fact, our exact knowledge of the behavior of steels under continued applied load at high temperature is in some respects better than that concerning steel at ordinary temperature. Actual tests of flow or creep have been made on our steels, and it is confidently felt that it is known within a reasonable degree of accuracy the temperature and stress limits of their satisfactory and defined performance.

Result of Investigations

Extensive investigations as carried out in our laboratories into the creep or flow of metals has demonstrated that for each composition of steel there is a range of stress upward of zero, the continuous application of which does not produce rupture at least within reasonable periods of time, and for each of which there is, speaking approximately, a limit of deformation which also is not exceeded within reasonable periods of time.

One may call these ranges of stress creep limit stresses; that is, the stresses at which certain limiting values of creep are not exceeded (within reasonable periods of time). Thus 1 per cent creep limit stress at 1,000° F. for 10,000 hours is that stress which may be safely applied, without rupture and without more than 1 per cent deformation in one year.

According to our research, short-time tests at high temperatures are only of academic value (or in the segregation of certain alloys before beginning a program of research on the creep limit) and do not measure the ability of steel to carry sustained loads at high temperature over long periods of time and values so obtained should never be employed in the calculation of sections of stressed parts. Whether metals do or do not show continuous deformation under stress at temperature is of little practical interest when it is known that for a given temperature one may successfully use a certain maximum stress below which deformation is so slow as to be unmeasurable or at least not harmful throughout the service life of the unit.

In ordinary engineering practice, when permanence according to engineering standards is absolute, the argument has no more than philosophical interest, but with practice extending in regions where strength of metals is obviously a function of time and temperature, the designing engineer is faced with the necessity of taking these factors into consideration. He can no longer aim for permanence, because it is yet to be achieved. He, therefore, must orient his mind to the idea, that is, that the equipment will grow and distort continuously under the forces to which it is subjected. He must so proportion them that the change of form will neither end in rupture nor exceed the permissible limits of deformation before the term of its allotted life.

The question, therefore, is no longer whether a steam or oil valve will safely carry a certain stress at a particular temperature, but rather how long will it be before its length and other dimensions will increase to such an extent that replacement is necessary.

Regardless, therefore, whether metals at high temperatures deform continuously under stress by viscous flow or whether they behave as plastic materials with a definite stress flow value for each temperature, they do possess a definite load-carrying ability which will, within definable temperature and stress limits, be accompanied by deformation so small that it may be disregarded for all practical purposes.

Our knowledge of the stability of metals as shown by the creep test inaugurates a new kind of designing because if equipment is going to stretch at working temperatures, we must let it stretch because there is no way of stopping it. All we can do is to so proportion same

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so that it may stretch within well defined limits for 2 or 10 years, as the case may be, before trouble arrives from change of dimensions. If, for instance, a life of 100,000 hours is considered, a stress must be used which will not permit the equipment to increase in size by more than 1 per cent along the direction of stress and stretching, therefore, must be confined to a maximum rate of 10-6 per hour.

It is evident that in obtaining these values of the limiting stresses, we are getting into a range of measurement beyond the possibilities of ordinary laboratory equipment, yet the life of valves and fittings in high-temperature service depends upon the determination of creep rates to an accuracy of the order stated.

The length of time required to make such small creep rates detectable and the constants necessary to make figures reliable puts their direct determination only in the well-equipped laboratory.

With the proper creep limits known for each temperature and each composition of steel, the design and operation of equipment to operate successfully at high temperature is placed on apparently a sound foundation.

The principles of limited life must be accepted and the user will be confronted by three variables: stress, temperature, life; any two being given, the permissible value of the other would follow as a matter of course.

Chemical Resistivity

Excellent physical properties at elevated temperatures, however, are not the only criteria to be used in selecting alloys, for this service, as scaling, oxidation, and corrosion are decided factors. The real difficulty in connection with high temperature work is the combining of necessary physical properties with some particular chemical stability so as to have correct design for a complete working unit.

Problems of corrosion at high temperature, while not so formidable as under ordinary conditions, are far more difficult to solve because of the greater chemical affinity at high temperatures, or the disturbing of chemical equilibrium due to operating difficulties. Only under ideal conditions can problems of oxidation and scaling be considered apart from the accelerating effects of other elements than oxygen. The presence of other gases, or compounds, increases the rate of oxidation or scaling, depending upon what alloys or conditions are involved.

It is certain, therefore, that one of the most important though somewhat neglected studies is the action of various gases on metals at high temperatures.

Therefore, in the study of corrosion there are two conditions: namely, "erosion," which is the distintegration or destructive action by physical causes, and "corrosion," which is the disintegration or destructive action by chemical causes.

Little is really known about the mechanism and true nature of corrosion, and so much depends upon the kind of reaction produced that it is hard to make a prediction, based on laboratory tests, as to what will happen after a piece of equipment has been in service a month.

The ultimate aim of all corrision tests should be to derive a comprehensive series of tests to which standard specimens of materials may be subjected and by which the rate of corrosion of these metals may be approximately predicted for certain service conditions.

In our work, efforts have been made to overcome difficulties in determining true corrosion by using apparatus designed as nearly as possible to duplicate service conditions, and by noting the film, pitting, etc., and reducing the work to inches penetration per month, so that a relative figure may be obtained for various classes of alloys. Laboratory tests are continually checked with service reports, because service reports tell the true story.

Wear and Abrasion

Despite the difference in effect observed by different investigators with various test methods, there are a number of general conclusions which may be drawn from these studies of erosion and wear.

Hardness appreciably improves performance, but hardness itself is no certain criterion of the erosion resistance of various metals as this depends to a great extent upon structural composition, and extremely hard metals are unsuitable to resist shock on account of brittleness.

Hardened steels that have been tempered, while not so resistant, are far superior for service conditions on account of their toughness, and this toughness certainly is a factor that tends to resist erosion and wear.

Resistance to erosion does not in general increase directly with strength and hardness. Both hardness and toughness are important factors in determining the wearing qualities of an alloy because hardness increases resistance to penetration (by erosive gases), scratching, and displacement of metal, while toughness makes it difficult to tear off small particles of metal, which particles, when torn, constitute an abrasive of considerable effectiveness.

Therefore, an alloy which has a certain amount of hardness combined with toughness is better suited to resist erosion and wear than one possessing only great hardness.

It must be remembered, however, that any hardness produced by heat treatment will be lost in service if the tempering necessary to produce this hardness has been carried out at a temperature below the operating temperature.

Thermal Expansion

Thermal expansion is one of the most important points that has a direct bearing on the design of equipment for safe operation at high temperature, because it is a well-known physical law that when heat is applied to a body, expansion takes place in all directions. It is also a well-known fact that when heat is abstracted from such a body, contraction takes place accordingly. We can reasonably assume that most failures taking place at high temperatures are caused by the use of a combination of alloys that are entirely unsuited for the work or, from lack of knowledge on the part of the designer of certain stresses, not readily calculated due to the nonuniformity of temperature distribution. In our opinion, the necessity of the cycle of operation from normal temperature to high temperature is a factor that limits more than any other the life of equipment in high temperature service. When thermal expansion stresses exceed the proportional limit of the alloy, they produce certain deformed areas which are "set" for the highest operating temperature of the cycle and are likely to cause failure through a particular kind of fatigue when temperature returns to normal after a number of repeated cycles.

It is no easy matter to avoid deformation caused by temperature stresses which are primarily due to operation or to lack of knowledge in design, so that certain destructive conditions must be accepted in all high temperature work.

The Alloying Elements

Metallurgists, as a general rule, have accepted the belief that metal consists of two states, a crystalline state and an amorphous state. The crystalline phase or state is "thermally stable but mechanically unstable" and an amorphous phase is "thermally unstable but mechanically stable." This implies the two phases are not fixed, but may vary according to given conditions.

According to White and Clark,[1] if it is desired to increase the strength of metal consisting of the two phases of unequal strength, two ways are open.

1. The addition or formation of some substance which by its presence increases the strength of the weaker phase.

2. The addition or formation of some substance which tends to remove the weaker of the two phases.

And from this it is first necessary to determine which of the phases is the weaker and then take steps to strengthen or remove this weak phase.

It is a well-known fact that at ordinary temperature the fracture of steel proceeds through the grains and not around them, this being caused by greater strength of the amorphous boundaries. As the temperature is increased, however, the amorphous phase weakens at a more rapid rate than the crystal proper and a temperature is reached where it proceeds around the grains and not through them. This temperature is called the equicohesive temperature, and corresponds closely to the recrystallization temperature. Therefore, it is important to know over what temperature range and for what duration stability is desired before the effect of the alloying element can be properly determined.

White and Clark advance the following hypothesis: If stability is desired below the equicohesive temperature they find that the addition or formation of any element, compound or constituent which does not enter into solid solution with the matrix, but which by the very nature of its presence interferes with crystal slippage, will tend to increase the stability of the metals of which it forms a part.

Above the equicohesive range they find: The addition or formation of any element, compound or constituent which strengthens the grain boundaries by interfering with plastic flow will increase the stability of the metal of which it forms a part.

Influence Upon Stability

Considering these foregoing principles and the effect of certain alloying elements upon the structure of metals to which they are added, it should be possible to predict and explain the influence of various alloy conditions upon the stability of the resulting alloy.

Many alloying elements influence stability throughout the temperature range of steels to which they are added, but the effect may vary depending upon the temperature under consideration.

The carbide formers increase the stability of metals below the equicohesive range, because of carbide particles interfering with crystal slippage, and they increase stability above the equicohesive range due to carbide formers at the grain boundaries interfering with plastic flow.

The effect of the addition of proper alloying elements to steel enables one to decrease the injurious or undesirable properties and to intensify others that are preferred in the final product.

Alloying elements of the type above described increase the physical results of steel, such as tensile strength, elastic limit, dynamic strength, resistance to wear and fatigue, increased corrosion, resistance and hardening power, lack of brittleness, etc., but also increase purity, solidness and homogeniety of the steel, because alloying elements induce a freedom from occluded gases.

A quality often described as "tough hardness" is especially desired and is one of the outstanding features of proper alloy steel. This so-called quality is in all probability due to the somewhat finer and denser structure of the constituents and their uniform distribution. This fine, dense structure so paramount in quality steels is obtained only through the actual influence of the alloying elements in producing in the steel a condition of purity and freedom from gases, and subsequently forms a metal which, at the time structural changes occur, is in the best possible condition for these changes to take place.

Design

A.S.A. standard flanges and flanged fittings are all rated nominally at 750° F. Other classes of fittings are usually rated at a temperature corresponding to a nominal saturated steam pressure, while pipe is usually rated in terms of allowable working stress cold. In any case, when a fitting is to be used at a temperature other than that at which it is rated, it becomes necessary to calculate the allowable working pressure corresponding to the working temperature.

In our company's work there are many valves sold for various pressures and temperatures, and as the strength of steel decreases rapidly at high temperature, it is necessary to establish a rule giving the maximum pressure for a particular temperature.

A survey of the ratings of the A.S.A. and a consideration of the characteristics of steels at high temperature has led to the construction of a series of charts giving the pressure temperature ratings of various types of steel valves in use, at temperatures above the nominal A.S.A. rating of 750° F. The A.S.A. does not suggest any pressure ratings for temperatures higher than 750° F. and many valves are used at temperatures between 900 and 1,100° F. in the oil industry.

A series of rating charts show that, whereas alloy steel bodies and bonnets of valves are sufficiently strong at 1,000° F., the end flanges and flange bolting is extremely weak, and should the A.S.A. standard be used for 1,000° temperature, the valve is very likely to fail in service.

With the actual stresses in practice known and computed, and with good data at hand on the several steels it is not only logical but absolutely necessary to use a pressure temperature rating other than A.S.A. for temperatures above 750° F.

[1] Stability of Metals at Elevated Temperature, University of Michigan Engineering Research Bulletin No. 11, 1928, pp. 92-94.

The Oil Man's Calendar

October

15—Tulsa, American Chemical Society, Oklahoma section, Tulsa Club.

20—Excelsior Springs, Mo., National Association of Credit Men, Refiners Division.

25-27—Kansas City, Mo., Four State Convention, Hotel President.

(?) —Chicago, Ill., American Society of Mechanical Engineers (fuel division).

November

2-4—Indianapolis, Ind., Indiana Petroleum Association, Hotel Severin.

10—Los Angeles, Calif., California Natural Gasoline Association.

10-12—Atlanta, Ga., Southeastern Economic Conference.

15-17—Houston, Tex., thirteenth annual meeting, American Petroleum Institute.

December

5—New Orleans, La., tenth annual Asphalt Paving Conference, and Association of Asphalt Paving Technologists.

5-9—New York, N. Y., American Society of Mechanical Engineers.

5-10—New York, N. Y., National Exposition of Power & Mechanical Engineering.

6-8—Omaha, Neb., Nebraska Petroleum Marketers, Hotel Fontenelle.

(?) —Great Falls, Mont., Rocky Mountain Oil and Gas Association, Rainbow Hotel.

1933

February

15-17—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Wallick Hotel.

March

23-25—Houston, Tex., American Association of Petroleum Geologists.

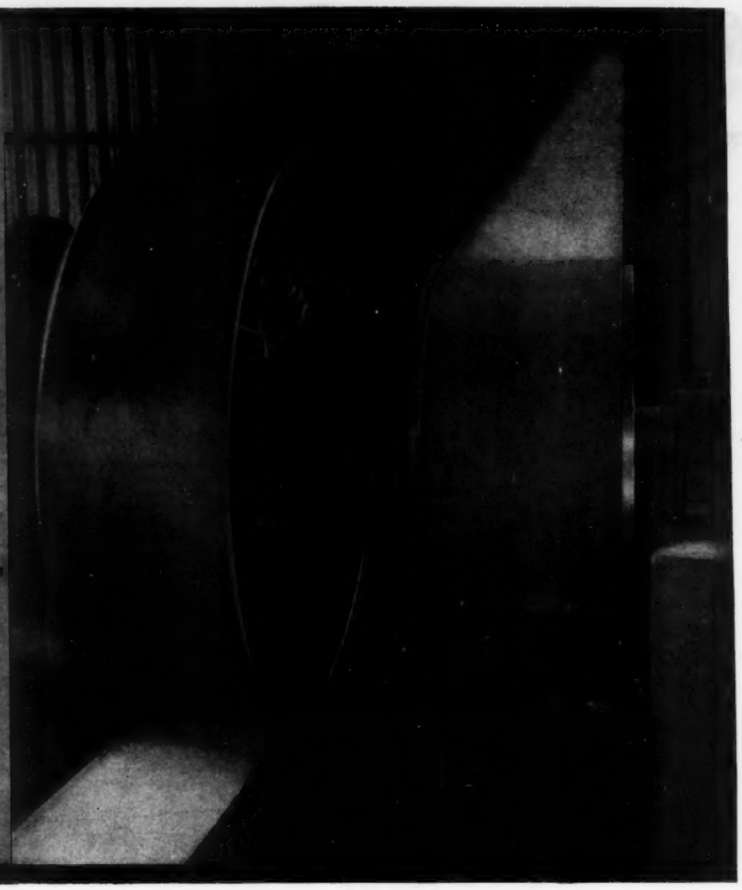
April

20-21—Cleveland, Ohio, National Petroleum Association, Cleveland Hotel.

June

26-30—Chicago, Ill., annual meeting, American Society for Testing Materials, Stevens Hotel.

DOUBLE CORE
DOUBLE WRAP
DOUBLE DUTY



Here is a Goodyear COMPASS (Cord) Oil Well Belt, used in drilling a 4100 ft. well and now shown on pumping duty for a prominent operator in the Seminole, Oklahoma, field. A piece was added to provide additional length for service on the 4009 ft. beam well.

Of new Goodyear DOUBLE Construction, it is DOUBLY equipped for the job.

Its double core consists of TWO layers of stoutest Goodyear cord, toughly fortified with Goodyear rubber.

Its double thick envelope staunchly protects the cords against direct wear.

The cords carry the load — the envelope guards the cords.

No wonder operators are reporting up to *five times normal belt life* from Goodyear COMPASS (Cord) Oil Well Belt in drilling, pumping and band-wheel duty.

Goodyear COMPASS (Cord) Oil Well Belt is Goodyear designed and built to deliver better, more economical performance, and is accurately recommended for the job by the G. T. M. — Goodyear Technical Man.

You will save money by using Goodyear Belts, Goodyear Hy-Pressure Rotary Hose and other Goodyear Mechanical Rubber Goods recommended by the G.T.M. Write to Goodyear, Akron, Ohio, or Los Angeles, Calif., and ask him to call.

TUNE IN: Goodyear invites you to hear the Revelers Quartet, Goodyear Concert-Dance Orchestra and a feature guest artist every Wednesday night, over N. B. C. Red Network, WEAF and Associated Stations.

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The OIL and GAS JOURNAL

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Member, Audit Bureau of Circulations

Good News

Talk of a crude price cut has been routed by the action of the Texas Railroad Commission reducing production allowables in that State.

The price cut talk grew from the increasing fear of continued overproduction of oil in the face of a more than seasonal decline in the consumption of gasoline.

That was logical and inevitable. But what was neither logical nor inevitable was to continue overproduction knowing it would mean a cut.

It was not a situation where things could be let slide because they would certainly slide the wrong way. Too much crude was being produced even during the main gasoline season and as demand lessened it became a case of not only not producing more crude but of not producing as much.

Nothing short of a material reduction in production could avert a reduction in price.

Educated by the experience of East Texas, producers throughout the State have seen the light. The Railroad Commission charged with the conservation of the State's oil resources has had practical demonstration of cause and effect. Enlightened public opinion has recognized the facts.

It was simply a choice of plunging ahead into known disaster or applying the brakes and the commission did the right thing.

Oklahoma and Kansas have long been producing under their allowable in an effort to stabilize the industry. California, after repeated attempts, has brought its production into line.

Texas alone has been overproducing continuously. It has been the sore spot in the industry. Yet the uphill battle of the Texas advocates of stabilization has been carried on persistently and successfully. They had all the facts and the arguments in their favor and have finally won through. Even those who have most stubbornly opposed them have come to their way of thinking, admitting that there was no practical alternative.

More and more it was being realized that too much oil means lowered prices. Having learned that, the natural next step was to avoid overproduction in order to stabilize the market. And a stabilized market would necessarily mean a living price.

The reduction in allowables by the Texas commission is the biggest step toward stabilization yet taken. But it must be remembered allowables are not automatic.

The mere promulgation of the commission's order will not reduce production without the active co-operation of producers in living up to the obligation laid upon them.

At the outset there will presumably be criticism and objection to the allotment of allowables as unfair to certain areas. This is to be expected, even if there was less basis for it. It is natural to wish an unpleasant duty on the other fellow.

But these differences of opinion should be ironed out without resort to litigation that may unsettle the whole structure.

Even as the different allowables stand, whatever losses any producers may protest would be comparatively trivial compared to what they would have to suffer if through dissension overproduction was continued and the price consequently was slashed as it certainly must be in such circumstances.

It will be vastly better to go along in full co-operation until the industry is stabilized and trust to future adjustments compensating for any grounds for complaint now.

This is as true for the individual operator as for the industry at large because both are subject to the same penalties if the attempt at stabilization is defeated by continued overproduction.

The Bureau of Mines figures for the first eight months of this year show a decline in the total demand for all oils of something over 9 per cent or an average of 264,000 barrels daily, compared to the same period a year ago.

These figures included the main gasoline consuming season. The decline for the remainder of the year and winter will, in all probability, be larger. How vain then is it to suppose we can maintain crude production at the present figure without forcing down the market?

Thirty or thirty-five thousand barrels of illegally produced oil in East Texas has weakened the whole structure for months. Stolen oil must be stopped or legitimate producers must make an additional reduction to offset it.

It may take a greater effort than any yet put forth to stop oil theft but if law-abiding producers realize that stolen oil is forcing a corresponding reduction of their own production they may be more insistent on its eradication.

Now that the state commission has made a state-wide order calculated, if enforced, to stabilize the industry, not only in Texas but throughout the country, the operators of Texas should stand stoutly back of the commission, both in respecting the new allowables and in supporting whatever efforts are needed to stamp out oil theft.

It is no longer only a matter of avoiding a price cut as, judging by the announcements following the commission's order of an increase in East Texas, North and Central Texas, the Gulf Coast, Oklahoma and Kansas, stabilization when effected will be on a better price basis.

Producers who have borne the brunt of the struggle for stabilization at the cost of repeated and continued sacrifices were induced to join the movement by the expectation that price cutting could be stopped and that reasonable prices could be maintained.

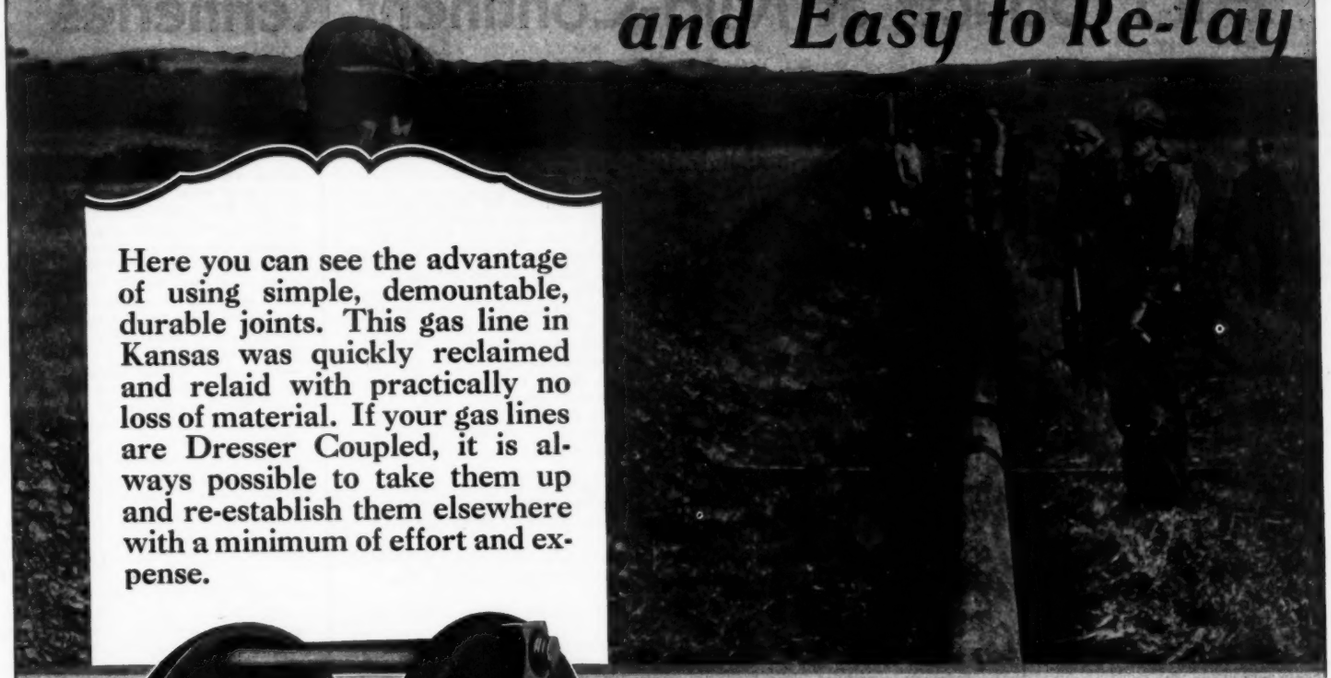
Owing to a variety of circumstances it has not been possible to realize this but the time should be at hand when it will be possible. A satisfactory solution of the difficulties in Texas will place the industry in a position where it can operate on a business-like basis and at a reasonable profit.

That has been the goal of the long fight for co-operation within the industry, to get oil men to realize that they had more to gain from orderly and regulated production than from a wasteful and senseless competition that wasted the nation's resources, broke the industry's market and could end only in disaster.

Today we are nearer stabilization than ever before—if the producers of Texas will enforce the new allowables on themselves. But it can only be attained and maintained by the units of the industry itself.

It is one thing to gain stability. It is another to make it stay put. It will require constant and continuing effort and vigilance to hold what we have gained and loyal co-operation in guarding against renewed overproduction.

EASY TO RECLAIM
and Easy to Re-lay



Here you can see the advantage of using simple, demountable, durable joints. This gas line in Kansas was quickly reclaimed and relaid with practically no loss of material. If your gas lines are Dresser Coupled, it is always possible to take them up and re-establish them elsewhere with a minimum of effort and expense.

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General Advance Posted in Price of Practically All Products at Mid-Continent Refineries

By W. T. ZIEGENHAIN

Receipt Monday of the Texas Railroad Commission's order that crude oil production in that State be reduced 121,000 bbls. below the present output by October 15, followed Tuesday by the announcement the Sun Oil was advancing its posted price on East Texas and Gulf Coast crudes October 15, acted as a signal to Mid-Continent refiners to advance their quotations on practically all products.

This favorable development was augmented by the fact Mid-Continent refiners were running approximately 28,000 bbls. less oil daily in their plants during October than a month ago, and the reduction had been general in all areas.

This advance in the crude price came at a time when many were expecting a cut. A pessimistic attitude had dominated the market in the past month despite the efforts of refiners to hold runs to current demands and despite favorable developments in the enforcing of proration orders. There had also been a more watchful eye focussed on oil movements to refineries, the source of which oil was not readily traceable. "Midnight riders" had been delivering substantial quantities of oil out of the East Texas Field by truck and the posting of lower prices on crude by a few small refiners in North and East Texas where crude was more readily available, was interpreted by many as the forerunner of a general cut in Mid-Continent crude prices. In the past two weeks there has been a large number of retail price reductions reaching all of the way from the East Coast to the Rockies and the improved position of the California market was not considered close enough home to be helpful. The falling off in the seasonal demand for gasoline and the low rate of industrial operations presented a poor picture for the immediate future.

These factors made marketers skeptical of the advice of a few of the larger refiners that a program of proration enforcement was having results and that crude production would be cut in East Texas to conserve the declining energy forcing the oil to the surface. These refiners had practically eliminated themselves from the spot market on gasoline by holding to prices which were from 1 to 1¼ cents above the low of the going market. Then, about a week ago it became generally known that a large Oklahoma refiner, who had generally been identified with that group which sought to give aid to the market at times of uncertainty, was offering substantial quantities of motor fuel with an octane specification at prices at or below the lowest quotations given by the "cut price" group. This development undermined much of the confidence that marketers had placed in the efforts to hold prices and everything seemed to be shaping itself for a cut in crude prices. Then, when the proration order was issued the belief was generally held that the chance of a drop in the crude price was eliminated and when the price advance by the Sun Oil Co. was announced, it seemed to clinch the belief that there was no chance for crude prices to be generally reduced.

The result of this turn in events will likely be the reinstating of a price structure somewhere near that obtained during May, June, July and August, following the crude advance in April.

Motor fuel prices had been pushed down below the point where they had a reasonable relationship with the crude price. The explanation given is that the gasoline market was anticipating a reduction in the crude price. With thought of such a course now seemingly out of the picture, it seems only reasonable that prices be restored at a level near the point where talk of a drop in crude prices first started.

Kerosene was a feature of the market even before the favorable developments in the general market. The installation of reforming units and the reduction in the crude runs during the past two

Refined Market Barometer

The advance of 12 cents a barrel in the posted price for Mid-Continent crude effective October 15 as announced by the Sinclair Prairie Oil Marketing Co. and safeguarded by the order of the Texas Railroad Commission earlier whereby production would be further curtailed in that State, brought about a general advance in the Mid-Continent refined oil prices and gave strength to all other markets. California had already advanced motor fuels. Natural gasoline was lower throughout the Mid-Continent early in the week but most of the lost ground has since been regained and a strong market is predicted over the immediate future. Kerosene again featured the market in the Mid-Continent, Chicago and eastern areas. Fuel oil and gas oil prices strengthened. Lubricants and bright stocks remained unchanged except in Pennsylvania where prices were generally lower.

Mid-Continent—All grades of gasoline, kerosene, distillates, gas oil and fuel oils were advanced. Lubricants and wax gained a stronger undertone but prices remained unchanged. Natural gasoline slightly lower but expected to be improved.

Eastern Seaboard—Prices were generally unchanged pending the trend of Mid-Continent crude prices. With this question settled affirmatively, an immediate strengthening of the gasoline, kerosene and fuel oil prices is anticipated.

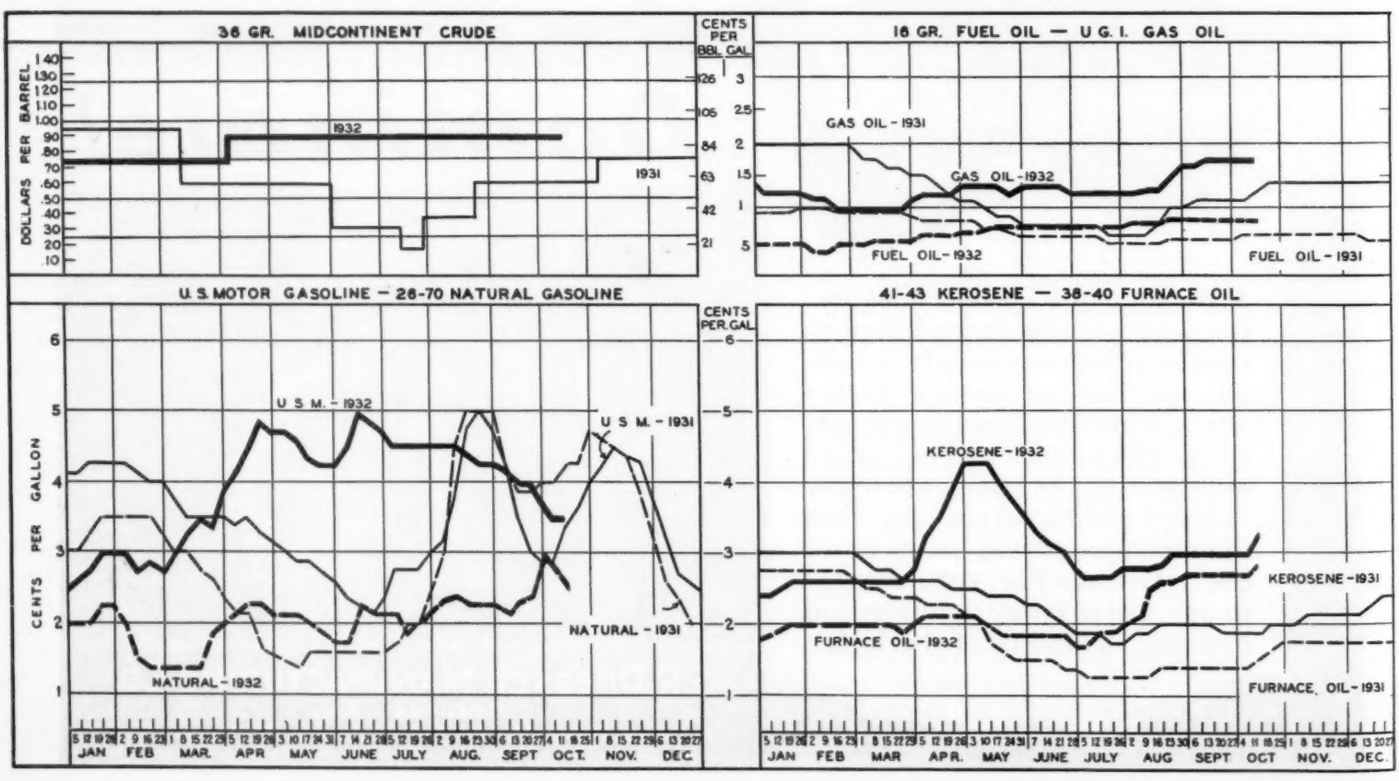
Chicago—There has been a growing optimism regarding the trend of crude prices and the refined oil market structure remained firm despite scattered sacrifice sales early in the week.

California—All grades of gasoline and the balance of the market remained firm.

Gulf Coast—Although prices remained unchanged the advance in Mid-Continent crude prices greatly improved the outlook on gasoline and fuel oils in the immediate future.

Pennsylvania—Prices generally unchanged except certain motor oils and bright stocks lower.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)


36 GR. MIDCONTINENT CRUDE
DOLLARS PER BARREL
1932
1931
CENTS PER BBL. GAL
18 GR. FUEL OIL — U.G.I. GAS OIL
GAS OIL - 1931
GAS OIL - 1932
FUEL OIL - 1932
FUEL OIL - 1931
U.S. MOTOR GASOLINE — 28-70 NATURAL GASOLINE
CENTS PER GALLON
U.S.M. - 1932
U.S.M. - 1931
NATURAL - 1931
NATURAL - 1932
41-43 KEROSENE — 38-40 FURNACE OIL
CENTS PER GAL
KEROSENE - 1932
KEROSENE - 1931
FURNACE OIL - 1932
FURNACE OIL - 1931
JAN FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC

months has lessened the supply. The coming of colder weather has brought an unusually strong demand. This is said to be due to the use of oil stoves in homes which are normally heated with other fuels. Although kerosene is more costly, it is being used because it can be bought in small lots and a man with a half dollar can buy it but he could not order a load of coal. This pick-up in consumption is most noticeable in the industrial centers. Distillates and fuel oils shared in the same upward trend of price changes as kerosene but not to the same degree. Lubricants, particularly bright stock, remained sluggish, but the price shading that had been practiced was expected to fade away as the balance of the refined oil market strengthened. Wax sales carried the same price as a week ago, but stocks had been reduced to a position where an advance appeared likely. Natural gasoline prices were slightly lower but encouragement was offered by the improved outlook in the refinery gasoline market.

Gasoline

During the past week the motor grade of refinery gasoline sold down to 3 cents to a jobber. The refiner said he was "cleaning up" his stocks preparatory to shutting down. The 3⅛-cent and 3¼-cent material that was present in the market and going to jobbers early in the week was absent at its close. A price of 3½ cents was minimum early Tuesday and the larger refiners felt this material would be removed from the market before the close of that day.

Those refiners who had been holding their low octane gasoline at the "unreasonable" price of 4½ cents over the past week now say the general market will be up to their quotation by the close of the week. There is a continuation in the strong demand for the higher octane motor fuels, namely the 65 octane or higher. Buyers are more interested in the 400 endpoint and the 375 endpoint material with an octane value of 65 or more, indicating a fuller appreciation of this quality of motor fuel as the winter months are approached.

Natural Gasoline

Early in the week the natural gasoline market showed the same weakness so evident in the refinery market and prices on all grades of natural dropped from one-fourth to three-fourths cent. Then, as the refinery market strengthened on Monday and Tuesday there was an unusual rush on the part of manufacturers to check what their competitors were doing. On Tuesday there was a greatly improved sentiment and prices seemed headed for higher ground, but all the time emphasis was placed upon the success of the refinery market. Anticipating an improvement in the refinery market the 11-pound material was sold at 4 cents on Tuesday, and although the price seemed good at that time, the manufacturer questioned the wisdom of the sale at this price. The 26-70 grade was not able to recover enough to reach the price quoted for this a week ago but there was an increasing movement of this grade to refineries and was expected to reflect the greatest further improvement in price.

Kerosene

Kerosene featured the market throughout the week. Stocks were reduced to a low point and the higher price of 3¼ cents quoted for the 41 gravity material did not halt additional inquiries from coming in. Small lots were purchased by refiners to augment their production to meet commitments made a week ago and the immediate future of the kerosene market was given an optimistic outlook as the result.

Distillates

The same improvement shown in the kerosene market was reflected in the furnace oil and distillate market. Practically all grades were quoted one-eighth cent higher.

ARGENTINE PROSPECTING

The provincial government of Mendoza has decided to turn over to the Argentine national board of fiscal oil deposits all prospecting for oil and operations of oil fields.

Bureau of Mines Statistics on Petroleum for the Month of August, 1932

Crude petroleum: According to reports received by the Bureau of Mines, Department of Commerce, the production of crude petroleum in the United States during August, 1932, totaled 66,220,000 bbls., a daily average of 2,136,000 bbls. This represents a slight decline in output from July. The largest single decrease was recorded in the Oklahoma City Field, where the daily average output declined from 93,000 bbls. in July to 73,000 bbls. in August. The daily average output in Texas remained unchanged at 861,000 bbls., with increased production in the coastal district nearly offsetting a decline in East Texas. The increase in the Texas Gulf Coast was due primarily to new developments in the Rabbs Ridge and Conroe Fields; the drop in East Texas resulted from a reduction in the daily allowable per well. The number of oil wells completed in the East Texas Field totaled 669, compared with the peak of 719 in July. The average daily initial of the new wells in East Texas continued to decline and amounted to 2,200 bbls., compared with 2,300 bbls. in July.

The trend in stocks of all oils showed a marked change in August, as the net withdrawal totaled 6,379,000 bbls. against a net increase of 800,000 bbls. in July. This resulted primarily from the fact that motor fuel stocks showed a withdrawal of nearly 4,000,000 bbls. in August, whereas in July they increased nearly 700,000 bbls. Crude petroleum continued to be withdrawn from storage in August but the net reduction was considerably below that in July, as the daily average crude runs to stills dropped from 2,305,000 bbls. in July to 2,170,000 bbls. in August.

Refined Products

The percentage yield of gasoline at refineries increased in August, but because the decrease in crude runs exerted a relatively greater effect, the daily average output of motor fuel again declined. Imports of gasoline continued low; exports remained virtually unchanged. The indicated domestic demand for motor fuel totaled 35,207,000 bbls., a daily average of 1,136,000 bbls. Compared with a year ago, this represents a decline of 10.8 per cent. Stocks of motor fuel on August 31 totaled 52,858,000 bbls., which, at the current rate of total demand, represents 44 days' supply compared with 52 days' supply on hand a month ago.

The refinery data of this report were compiled from schedules of 342 refineries, with an aggregate daily recorded crude oil capacity of 3,562,202 bbls., covering, as far as the bureau is able to determine, all operations during August, 1932. These refineries operated during August at 61 per cent of their recorded capacity, given above, compared with 338 refineries operating at 65 per cent of their capacity in July.

Prepared under the supervision of G. R. Hopkins, petroleum economics division, E. B. Swanson, chief economist, petroleum economics division.

Output of Special Naphthas Is to be Reported Monthly

WASHINGTON, D. C., Oct. 8.—The first figures showing the production of special naphthas in the United States were prepared by G. R. Hopkins, petroleum economics division, Bureau of Mines. His report shows that a total of 488,000 bbls. were manufactured in July.

The California figures, available today for the first time, indicate a production of 44,000 bbls. in that area. The latest monthly petroleum statement showing runs to stills and output of refineries for July indicated under the head of gasoline output 33,705,000 bbls., which included 444,000 bbls. of special naphthas east of California. These figures are not worked up by districts but only give the entire output for the area indicated. The total of production east of California and California for July is thus shown to be 488,000 bbls. of special naphthas. These figures will hereafter be available monthly.—C.E.K.

U. S. Motor Car Production During August at Low Point

WASHINGTON, D. C., Oct. 10.—August factory sales of automobiles manufactured in the United States including foreign assemblies from parts made in the United States and reported as complete units or vehicles, based on data reported to the Bureau of Census, consisted of 90,324 vehicles, of which 75,898 were passenger cars, 14,417 trucks and 9 taxicabs. This compares with 111,141 vehicles in July, 187,197 vehicles in August, 1931, and 224,368 vehicles in August, 1930.

The taxicabs specially reported are built specially for that purpose.—C. E. K.

TEXAS LEGISLATIVE INQUIRY

AUSTIN, Tex., Oct. 10.—The new legislative oil investigating committee has been called by its chairman, Representative R. J. Long of Wichita Falls, to begin its work in a session at Kilgore next Wednesday morning. Members are Representative Long, R. M. Wagstaff, Abilene, and Gordon M. Burns, Huntsville. Mr. Long said several days of open hearings will be held, with all producers, royalty and lease owners invited to offer suggestions and complaints. The committee was authorized on resolution of Representative Long to review conditions in the oil industry in all fields of the State, particularly concerning charges of theft of oil and producing methods.

American Petroleum Institute Weekly Refinery Statistics

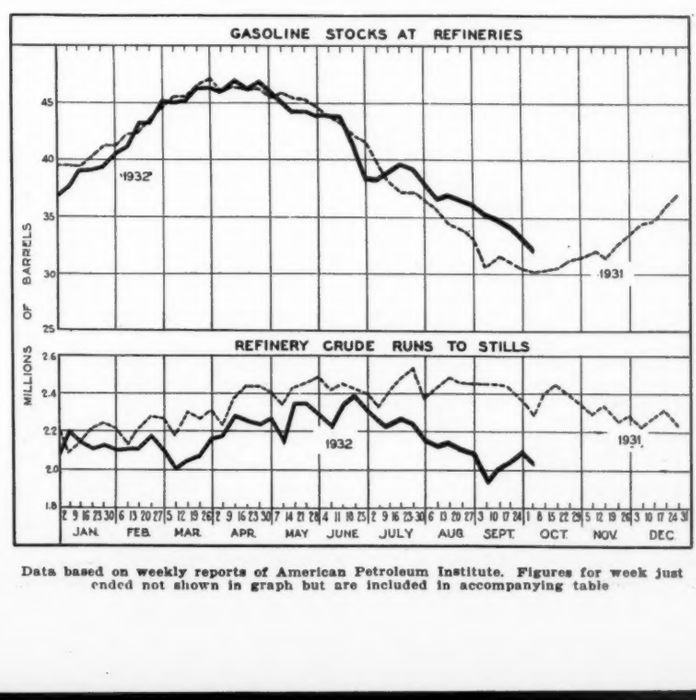
Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Gasoline stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

Week Ending October 8, 1932, Compared to Week Ago

	Week ending October 8				Week ending October 1			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	99.1	411,000	4,301,000	9,181,000	99.1	444,000	4,428,000	9,290,000
Appalachian	95.0	81,000	989,000	873,000	95.0	80,000	978,000	943,000
Ind., Ill., Ky.	97.5	266,000	3,423,000	4,119,000	97.5	281,000	3,673,000	4,184,000
Okla., Kans., Mo.	88.4	207,000	2,973,000	3,169,000	89.4	211,000	2,948,000	3,250,000
Tex. Gulf	98.2	387,000	4,418,000	10,501,000	98.4	375,000	4,477,000	10,405,000
La. Gulf	97.3	64,000	1,295,000	4,113,000	97.3	72,000	1,243,000	4,216,000
Inland Texas	72.1	95,000	1,078,000	2,081,000	72.1	91,000	1,043,000	2,057,000
N. La. and Ark.	94.6	41,000	102,000	551,000	94.6	39,000	105,000	565,000
Rocky Mtn.	91.4	27,000	1,233,000	481,000	91.4	26,000	1,302,000	492,000
California	94.6	426,000	12,098,000	100,673,000	94.6	435,000	12,210,000	100,270,000
Total U. S.	93.6	2,005,000	31,910,000	135,742,000	93.6	2,054,000	32,407,000	135,672,000

Week Ending October 8, 1932, Compared to Year Ago

	Week ending October 8				Week ending October 10, 1931			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	99.1	411,000	4,301,000	9,181,000	100.0	476,700	3,949,000	10,540,000
Appalachian	95.0	81,000	989,000	873,000	91.8	100,200	1,267,000	1,526,000
Ind., Ill., Ky.	97.5	266,000	3,423,000	4,119,000	98.9	319,600	3,616,000	5,124,000
Okla., Kans., Mo.	88.4	207,000	2,973,000	3,169,000	89.6	248,100	2,803,000	5,107,000
Tex. Gulf	98.2	387,000	4,418,000	10,501,000	99.8	411,000	3,884,000	8,095,000
La. Gulf	97.3	64,000	1,295,000	4,113,000	100.0	114,900	585,000	2,556,000
Inland Texas	72.1	95,000	1,078,000	2,081,000	....	124,400	1,315,000	3,324,000
N. La. and Ark.	94.6	41,000	102,000	551,000	....	51,200	195,000	943,000
Rocky Mtn.	91.4	27,000	1,233,000	481,000	89.3	54,000	1,275,000	821,000
California	94.6	426,000	12,098,000	100,673,000	97.1	500,000	11,364,000	97,174,000
Total U. S.	93.6	2,005,000	31,910,000	135,742,000	95.2	2,400,100	30,253,000	136,210,000



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table

Improvement in Sentiment in Chicago Markets; Adopt Firm Policy in Meeting Competition

By ROBERT C. CONINE
Chicago Bureau, The Oil and Gas Journal

CHICAGO, Oct. 10. — While the fate of the crude oil markets is being read with varying conclusions in the developments in East and North Texas, Oklahoma City and other Oklahoma fields, an aggressive campaign of price cutting at the service stations of the major and semimajor oil companies is speeding ahead throughout the 13 states in this territory. In the Chicago district the constructive influences are emphasized and the outlook is dimmed but slightly by the easier trend in the gasoline tank car markets and the determination of the larger marketing companies to meet all retail price competition immediately.

A contrasting situation exists in the markets for the other refined and residual petroleum products. In these lists all the positions are firmly based on demand and comparative scarcity of materials. This is especially notable in this and other northerly districts where cold test specifications set an effective bar to a number of fuel sources. Practically all of the materials offered at the Chicago district ruling prices are zero fuels or nearly so. Outside heavy fuel oils with viscosities given at "below 1,000 at 100° F." and "below 500 at 100° F." have kept pace with price advances in the lower viscosity grades. There has been a steady, unhesitating advance in distillate and fuel oil tank car prices in the Chicago district. Monday found at least two of the majors, Shell Petroleum Corp. and Sinclair Oil & Refining Co., withdrawn from several of the distillate, gas oil and fuel oil tank car open markets. Shell advanced the price of its 26-28 zero fuel oil from 70 cents to 75 cents, and the last spot market sales of the higher gravity zero fuel oil from Shell and Sinclair were reported at 95 cents. Scattered sales of the 28-30 material were reported at $1. The 32-36 industrial gas oil which has experienced numerous adversities is moving into the limelight in the role of blending material in the production of the No. 2 heating oil sold from the tank wagon. Distillates and kerosenes show a definitely stronger position not only from seasonal considerations but also from a statistical standpoint which reflects the more extensive recycling and reforming operations carried on at the refineries.

Price Wars, Ethyl and Demand

Service station and tank wagon prices on the regular grade gasoline were reduced to meet price competition last week at 11 of the principal 31 points listed in the territory. This week Standard Oil Co. of Indiana announced additional cuts and the dates effective, as follows: Davenport, service station only, cut from 17.7 cents to 17 cents, October 3; Minneapolis, tank wagon only, cut from 18.4 cents to 16.4 cents, September 30; St. Louis, tank wagon only, cut from 14.6 cents to 13.5 cents, October 1; St. Joseph, tank wagon only, cut from 16.7 cents to 15 cents, October 4. At Grand Rapids and surrounding Michigan points the tank wagon and service station postings were revised upward. The Grand Rapids service station price was advanced from 14.5 cents to 16.5 cents, and the tank wagon price was raised from 14.5 cents to 17.5 cents, October 6. No changes were announced this week in the Stanolind or third grade postings at the principal points.

The report that Ethyl Gasoline Corp. is canvassing sentiment in respect to the proposed (by the president of the Western Petroleum Refiners Association) practice of blending third grade gasoline with Ethyl Gasoline as a regular service station marketing policy for the Ethyl licensees has met a reception in the Chicago district identical to that which greeted the report that Ethyl Gasoline Corp. was planning to introduce a second Ethyl Gasoline by distribution to the licensees of "Q fluid."

The idea appears to be that adoption of the Ethyl blending policy (be it noted that Ethyl Gasoline Corp. has not expressed itself either in favor or against the proposition) will mean the elimination of the regular grade pump at the service station. There would be an Ethyl Gasoline pump and a third grade gasoline pump. Immediately it is pointed out that the marketing companies have been forced to change pumps in comparatively recent times as follows: First to the visible pump, next to the electric pump, and last to the third grade pump and tank. The blending proposal carries the idea of a new and special pump which will regulate the two gasoline streams to make the blend desired. The whole thing, according to marketers and technologists here, is nothing more than the "Q" proposal under a different guise. The advantage which cracking installations have given to the progressive refiners, however, would not be wiped out. While general adoption and official sanction of the Ethyl blending policy would bring many newcomers into competition in the commercial or regular grade gasoline, the owners of modern cracking installations will be able to meet the Ethyl specifications more easily and will be able to save considerably on their Ethyl fluid.

	Price			
Place—	Stanolind	Ethyl	Blend	Red Crown
Chicago	13 6	18 1	15 85	15.1
Decatur	14.0	18 6	16.3	15.6
E. St. Louis	12 1	19.9	16.0	16 9
Joliet	15 6	18 6	17.1	15 6
Peoria	14 0	18.6	16.3	15.6
Quincy	10 5	18.0	14 25	15 0
Davenport	13 0	20 0	16.5	17 0
Des Moines	11 9	18.9	15.4	15.9
Sioux City	13 0	20 3	16 62	17.3
Mankato	14 6	21 3	17.95	18 3
Minneapolis	10.9	18.4	14.65	15.4
LaCrosse	15.0	22 4	18 7	19 4
Milwaukee	14.3	20 3	17 3	17 3
Madison	16.4	21.5	18.95	18.5
Detroit	12 1	15 5	13.8	12 5
Grand Rapids	12.5	19 5	16 0	16 5
Saginaw	14.6	18 6	16.6	15.6
Evansville	14.0	21 2	17 6	18.2
Indianapolis	15 9	21 4	18 65	18 4
South Bend	16.0	19 7	17.85	16.7
Fargo	15.0	23.1	19.05	20 1
Huron	17 1	22.5	19 8	19 5
Kansas City	12.0	18.1	15 05	15.1
Springf'd, Mo.	10 5	20 0	15 25	17.0
St. Louis	10.0	14.0	12 0	11 0
St. Joseph	9.9	18 0	13 95	15.0
Wichita	11.0	17.0	14 0	14.0
Bartlesville	14 0	21 0	17 5	18 0

If the major and semimajor companies elect to keep their regular grade gasolines in this territory, it is readily seen that plans relating to the price spreads between the regular and third grade gasolines, reported at length in these columns some time ago, must be carried out. It was planned to hold the maximum spread between the two grades to 4 cents and later on to reduce this maximum to 3 cents and less as soon as conditions justified the narrowing of the margins. All of this depends, of course, on how far the refiners and marketers go with the two-pump policy. The table presented is self-explanatory and it is only necessary to say that the "blend" is a 50-50 mixture of Ethyl Gasoline and third grade, or low octane gasoline. The prices are those in effect October 10, at 29 of the 31 principal points in the territory.

Octane Considerations

It is assumed for the purpose of discussion here that the blend of Ethyl Gasoline and third grade gasoline sought is one that will equal in antiknock rating the commercial or regular grades offered at the majority of service stations. A 50-50 blend of 78 octane Ethyl Gasoline with 54 octane third grade gasoline would give us a 66 octane number blend. Although several refiners say that installations at their plants are being completed to raise the octane rating of their regular grades, the following averages are taken from tests on samples picked up during the last week in July when octane ratings were more exigent from the standpoint of the motor than now. The average octane rating for nine Ethyl Gasolines (with 78 standard) in the Chicago district was 74. The average octane rating for nine regular grades was 62.2, and the average of the nine third grade gasolines was 54.3 octane. Ignoring the fact that among the nine marketers there were differences of 10 octane numbers or more in comparable grades, a calculation on the averages gives an Ethyl-third grade blend, 50-50, of 64.1 octane number. But at certain stations the blend would be only 56 octane, and at a number of the stations the regular grade had a better antiknock rating than the blend would show. In the Detroit district the Ethyl Gasolines were better than the standard, averaging 78.6 octane number, while the regular grades averaged 66.3 octane number, and the third grades averaged 53.6 octane number, making the average for the blend 60.1 octane number. In the Tulsa district the averages calculated from tests of 11 sets of the three gasolines are as follows: 74.7 octane number for the premium grade, 61.1 octane number for the regular grade, and 52.7 octane number for the third grade, making the blend 63.7 octane number.

The blending idea is not at all new. In the Chicago district there are any number of service station attendants who recommend that the customer try 5 gallons of Ethyl and 5 gallons of the third grade. But in the form taken by the practice in recent proposals the proposition can be said to have practically all of the major and semimajor refiners and marketers, and a considerable number of small operators who have taken pride in the manufacture of high quality gasoline with modern installations, as determined opponents. Whether or not this will affect further developments none will undertake to predict.

Motoring Weather Continues Favorable

Motoring weather continues and seasonal factors, while no longer favored by vacationing trade, are all on the side of the refiner. The mornings are cool enough to serve as reminders to those who have not stocked up on heating oils, and the days are bright and warm enough to encourage long drives and motoring to and from work. Contract gasoline business is reported at a good rate, although uncertainties in the gasoline tank car spot markets are making the jobbing trade extremely reluctant to extend themselves in the least. Distributors are looking for a sharp upturn in sales of blended gasolines and blending materials. Natural gasoline is showing an expected easing off and naphthas may be bought at lower prices than last week. The widespread price cuts at service stations have brought the general markets to lower levels even more effectively than the threat of crude oil price cuts. There are good indications that the retail markets are being stabilized on this lower level. At the independent price cut stations the competition is carried on mainly with blended motor fuel. Two naphthas were offered for resale at 3 cents in the Chicago district Monday. One was a straw 42-44 naphtha of 115 initial and 437 endpoint, and the other was a 48-50 naphtha with 166 initial and 445 endpoint and 30 color. Other blending naphthas eased off an eighth of a cent.

The Octane Brackets

Prices on most of the commercial grade gasolines are between three-eighths of a cent and half a cent above the quotations made on the low octane grade gasolines. However, these commercial grades are in most cases identifiable with the high octane bracket rather than the middle octane bracket. Most of the material offered as middle octane gasoline is around 60 octane number and better and a large number of sources appear willing to sacrifice all or most of the more or less established premium in order to get business. At least one refiner has discovered the fallacy of this kind of merchandising. This refiner writes to his customers as follows:

"We have just concluded an analysis of the cost of manufacturing our 65-68 octane gasoline and find that we have been marketing this motor fuel on a price basis that is somewhat too low to cover the additional expense involved in its production. It is necessary, accordingly, for us to increase slightly the price basis on which we have been selling this gasoline and effective October 15, it will be priced at one-quarter of a cent per gallon above the low quotation of the Chicago Journal of Commerce on date of shipment for 58-60 U. S. Motor gasoline of under 57 octane rating, Group 3. This same price schedule will also apply to our 60 octane 52-54 blending naphtha."

Without commenting on the fact that the refiner took his time about analyzing his costs, the statement gives some indication of the attitude of several minor operators who are stil operating their plants.

Gasoline Tank Car Prices

While most of the trade in the Chicago district were of the opinion that gasoline tank car prices have reached the bottom and are due to move upward with new developments in the crude oil situation, few were willing to gamble on their estimate of this week's markets and in the days to come to go into the spot market for material. Several, however, have backed their judgment with comparatively large purchases. If it were a case of the jobbing and distributing end of the business being near the point of saturation the outlook would look gloomy indeed, but all indications point to a condition exactly the opposite, and it may be expected that as soon as current uncertainties are definitely out of the way there will be sufficient outlet for any gasoline which may now threaten to lie on the markets as distress material.

There is good promise of the elimination of the practice of quoting prices at so much below the low of daily published ranges, but there is proof at hand that so far, whatever the seller and reseller may say on the subject, the re-

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Eastern Markets Have Been Stabilized By Price Slash and Aggressive War on Bootleggers

By A. E. MOCKLER
New York Bureau, The Oil and Gas Journal

NEW YORK, Oct. 10.—Refinery gasoline markets in this area have quieted down since the furor created by the sharp price cut inaugurated by Standard Oil Co. of New Jersey during the closing half of September. With few exceptions, major sellers in the area have met the Jersey posted price levels, and while motor fuel is moving out at unremunerative levels in most cases, the cuts have achieved their purpose of stabilizing markets throughout the greater part of the territory and have put a decided crimp into the operations of price cutters. With a number of states taking steps to further check gasoline bootlegging, marketers are showing more optimism regarding the outlook for the near future.

Refinery Gasoline

Posted prices at New York harbor terminals are generally held at 5¼ cents per gallon for U. S. Motor below 65 octane and 6 cents per gallon for 65 octane and above, in tank car lots, f.o.b. terminals, with Standard of New Jersey giving contract buyers an additional half cent margin on the high octane product, making a net price of 5½ cents. There are some variations from these prices, however, The Texas Company quoting low octane gasoline at 6 cents and its high octane product at 6½ cents, with Warner-Quinlan (Cities Service) quoting low octane at 5½ cents. Republic Oil is quoting a guaranteed 58-62 octane U. S. Motor at 6 cents per gallon, and U. S. Motor above 65 octane at 6¼ cents. Jobbing demand fell off somewhat during the week, under the influence of less favorable motoring weather.

The Boston market has come into line with New York, with principal sellers quoting the tank car market at 5¼ cents for U. S. Motor below 65 octane, and 6 cents per gallon for 65 octane number and above.

Baltimore and Charleston are also in line with New York, with the exception of the The Texas Company, which is quoting the same prices as it does at New York, these prices being from three-quarters to a full cent per gallon over the net prices named by Standard of New Jersey.

Philadelphia quotations are above those at other principal East Coast market centers, with U. S. Motor under 65 octane posted at 6 cents and the high octane product at 6½ cents. Republic Oil, however, is quoting above 65 octane at 6 cents, and it is indicated that other sellers are meeting this figure, necessitating shading likewise on their lower grade product.

With U. S. Motor under 65 octane posted at 5¼ cents at principal ports, the eastern market does not present a favorable dumping ground for surplus stocks from either the Gulf or California, and shipments from these points are falling off, which should substantially benefit the statistical position of the market locally. Even with a half cent duty of painters' naphtha and cleaners' solvent destined for eventual sale as motor fuel, with the addition of casinghead gasoline, eastern markets no longer present an attractive opening for imported petroleum products falling into these categories, and it is not believed that reported deals involving further shipments from Trinidad and Rumania will be consummated. Assuming that these products could get by with a half-cent duty, they would still have to be laid down at U. S. Atlantic Coast ports at a net price considerably under 4¾ cents per gallon to offer any opportunity for profit. In fact, considering handling charges, etc., it is doubtful if any imports with a total c.i.f. Atlantic Coast price much in excess of 3¾ cents per gallon could be handled with the importer even breaking even, considering the cost of blending casinghead with the low-grade imported product.

Integrated companies which have been bringing California gasoline eastward in fairly large volume during the summer months have indicated that these shipments will taper off, now that the season of peak consumption is past, and considering the low price levels for motor fuels now prevailing at eastern refineries.

Tank Wagon Gasoline

There were no general revisions in tank wagon or service station gasoline prices in East Coast territory during the week. Notwithstanding the recent price cuts in New York and New England territories, there is still sufficient spread between the tank car and tank wagon prices in this section of the territory to permit of the continued operations of price cutters, and markets are not steady at the recently lowered levels. The cut in this part of the territory, it will be recalled, was much less drastic than that named in Standard of New Jersey territory.

In the last-named area, however, it is reported that the price cuts have had the effect of generally stabilizing markets. The low levels reached on known brands of gasoline as a result of the sharp cuts has had the effect of pushing third-grades into the background in many parts of the territory, although the unusually low prices now prevailing on third grades give marketers the much needed weapon to put price cutters to route in sections where this type of murketing has proved so demoralizing.

There is a general tendency on the part of leading interests to get behind their premium fuel business again, and with winter weather at hand, a sharp increase in gallonage of the premium blends is looked for in many sections of the territory. The price differential remains unchanged at 3 cents per gallon.

Kerosene

Considerable activity was reported in the tank car market throughout the past week, and firmness was again in evidence, with leading sellers maintaining the market at the posted level of 5½ cents per gallon for 41-43 water white, f.o.b. terminals. With the heating season getting under way in full blast throughout the territory, it is apparent that kerosene will be used for domestic heating to a much greater extent this season than in recent years, marketers declare.

With the recent sharp drop in gasoline prices at East Coast refineries, the use of kerosene by tax evaders has apparently falllen off. Prior to the gasoline price cuts, it was reported, some interests had been blending kerosene, naphtha and natural gasoline to make motor fuels of rather dubious quality, which were sold at low prices, evading the regular gasoline taxes. This condition was responsible, in part at least, for the drastic price cuts in tank car and retail gasoline prices made a few weeks ago.

Tank wagon kerosene gallonage is increasing steadily, and this division of the market appears fully as active and strong as the refinery market at the moment. Retail kerosene prices in most parts of the territory are substantially higher than the net retail price of gasoline, a rather unusual situation. There were no general revisions in retail kerosene quotations reported in East Coast territory during the week. Most of the major companies are now stocking kerosene at their retail filling stations, and it is expected that direct retail sales by the large companies this year will be larger than ever before.

Furnace Oil

Refinery furnace oil prices were showing a fairly steady undertone during the past week, and considerably more activity was reported in the tank car market, as distributors were placing additional prompt shipment business and were speeding up withdrawals against standing contracts. Gallonage on the 21 gravity industrial grade was also reported on the increase, reflecting increased operations in a number of manufacturing lines.

Retail furnace oil marketers were busy in getting out deliveries during the week, and prices remained unchanged. The No. 2 grade, most generally used in domestic oil burners, is quoted at 6½ cents per gallon, tank wagon delivery, this being a spread of 2½ cents per gallon over the tank car price for the same grade and 3 cents per gallon over the price at which it is understood considerable contract business for 1932-33 was written by some of the major interests.

Refiners are keeping close watch on the heavy oil situation at the Gulf and in California, as it is evident that the principal competition in furnace oil sales this season will come from these points, and any lowering in cargo quotations at either center will probably be met by a corresponding reduction on the part of East Coast refiners.

While shipping operations continued on a curtailed basis, due to current quiet in export markets, this slackness is affecting the coal industry to a greater extent than the oil trade, proportionately, and refiners are still getting a substantial gallonage of bunkering business. Total sales for 1932 at principal East Coast ports are expected to compare favorably with 1931 sales totals.

The posted price for bunker "C" oil at principal Atlantic Coast ports remains unchanged at 75 cents per barrel, f.o.b. terminals in bulk, or 80 cents per barrel f.a.s. Uncertainty in the crude oil market, however, is communicating itself to local fuel oil markets, and the price situation, particularly in East Texas, is coming in for close attention. While it is generally believed that crude oil markets will finish out the year at present levels, the continued uncertain outlook over the longer term is expected to interfere somewhat with the 1933 contracting operations of major interests.

Diesel Oil

There were no price changes in the Diesel oil market at Atlantic or Gulf Coast ports during the past week, and refiners reported but routine activity, with contract withdrawals accounting for the bulk of the week's business. As is the case with bunker "C" oil, the market outlook is somewhat unsettled as a result of the uncertain position of the crude oil market. Due to these conditions, it is expected that refiners will defer their drive for 1933 contracts until later than usual this year, in the hope that the crude oil market will develop a more stable tone.

Tank car movement of Diesel oil was holding up fairly well throughout the week, with prices holding steady at the refineries. Sellers are looking for more activity in this division of the market over the balance of the year, as manufacturing operations increase in various lines of industry.

Gas Oil

Gallonage was along somewhat broader lines during the week, and the posted price for 28 gravity plus recycled oil remained steady at 4 cents per gallon, in tank car lots, f.o.b. terminals.

Contract movement of gas oil was fairly heavy throughout the period, with most of this oil moving at 3½ to 3⅝ cents per gallon on contracts booked during the first half of the year.

California is still shipping gas oil to the Atlantic Seaboard, and this movement is expected to continue for the remainder of the year. Some supplies are also expected to reach here from the Gulf.

Wax and Petrolatum

Reductions in eastern crude prices have tended to arrest the upward movement in paraffin wax prices, and the market during the past week was less strong. Demand had improved somewhat, however, and spot prices were well maintained on all grades. Domestic consumers were again in the market for fully refined wax, with much of the inquiring continuing to center on the higher melting points. Export demand was also a little better, with crude scale and the lower melting points of semi and fully refined mostly inquired for.

Seasonal expansion in demand for petroleum on the part of the pharmaceutical trade is reported, and movement of the white grades in particular has become more active. Most of this trading represents spot buying, comparatively little contract covering having been done this year. There were no price changes reported during the week on any grades.

Lubs

Recent weakness in the position of cylinder stocks has been accentuated by the reductions in posted prices for eastern crude, and while no further price changes on lubs materialized during the week, the market undertone was still rather easy. Refiners, however, are endeavoring to bolster the market position through improving the statistical position of the market, and reports from eastern refining centers indicate that further cuts in production have been determined upon in an effort to avoid further price recessions. Export buying, however, remained rather light, with operators holding off the market pending further developments in the price situation.

Domestic blenders and compounders have been increasing their takings of cylinder oils somewhat, and this added gallonage has helped the market in the face of falling export demand. Most of the domestic demand is centering on the low cold test stocks.

Demand for industrial lubs is slowly but steadily picking up as expanding manufacturing operations necessitate larger lub oil consumption. Many manufacturers who bought ahead prior to the effective date of the excise tax on lub oils are now at the end of their supplies of tax-free oils, and are coming back into the market for replacements, which has made for heavier tank car movement out

(Continued on Page 42)

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

EXCLUSIVE OF TAXES

The following quotations are exclusive of the Federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils, which became effective June 21.

Gasolines

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
*U. S. Motor	.03¾	.04	.03½	.04
60-62 400	.03⅞	.04¼	.03¾	.04¼
64-66 390	.04	.04¼	.04	.04½
64-66 375	.04⅜	.04½	.04¼	.04½
68-70 350	.04½	.04¾	.04½	.04¾
NORTH TEXAS—				
*U. S. Motor	.03¾		.03⅜	.03⅝
60-62 400	.03⅞	.04	.03⅝	.03¾
64-66 390	.04		.03⅞	.04
64-66 375	.04¼	.04⅜	.04	.04½
64-66 360	.04⅜	.04⅝	.04½	.04⅝
†NORTH LOUISIANA—				
*U. S. Motor	.04¼		.04¼	
60-62 400	.04½		.04½	
†ARKANSAS—				
*U. S. Motor	.04½		.04½	
CHICAGO Based on Okla. (Group 3)—				
*U. S. Motor	.03⅝	.04	.03⅝	.03⅞
60-62 400	.03¾	.04¼	.03¾	.04
64-66 375	.04⅜	.04⅝	.04½	.04⅝
Aviation fighting grade	.05	.05½	.05	.05½
68-70 360	.04½	.04¾	.04⅝	.04¾

Octane Ratings—Above quotations cover price ranges on gasoline in which no octane rating is given. On October 4, in the case of the U. S. Motor and 60-62 400 endpoint grades, where an octane rating of 57-65, inclusive, is guaranteed, prices are three-eighths cent per gallon higher than quotations shown in above tables; where an octane rating of better than 65 is guaranteed, the prices are five-eighths cent higher. In the case of the remaining grades, gasolines of 65 octane rating or higher are quoted one-half cent higher than the quotations shown in above tables.

Unless otherwise provided by agreement of buyers and sellers, the Series 30 testing equipment of the Ethyl Gasoline Corp. is recognized as standard in determining octane ratings.

*Present distillation specifications on U. S. Motor gasoline are: 10 per cent evaporated, 167° F. maximum; 50 per cent, 284° F. maximum; 90 per cent, 392° F. maximum; residue not exceeding 2 per cent; maximum vapor pressure, 12 pounds. Additional specification on U. S. Motor gasoline available from bulletins of Bureau of Mines, Washington, D. C.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.05¾	.06	.05¾	.06
60-62 400	.06	.06¼	.06	.06¼
64-66 375	.06¼	.06½	.06¼	.06½
68-70 350	.06½	.06¾	.06½	.06¾

Octane Ratings—In the case of U. S. Motor and 60-62 400 endpoint grades, same price differentials based on octane ratings as shown in above tables for Oklahoma and other Mid-Continent areas:

CALIFORNIA (domestic movement only)—				
54-58 U. S. Motor	.06	.06½	.05½	.06
58-60 400	.06¾	.07	.06	.06½
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.05¼	.06	.05¼	
Boston	.05¼		.05¼	
Baltimore, Md.	.05¼	.06	.05¼	
Charleston, S. C.	.05¼	.06	.05¼	
U. S. Motor, 65 octane and above:				
New York (Bayonne)	*.05½	.06	*.05½	.06
Boston	.06	.06½	.06	
Baltimore, Md.	*.05½	.06½	*.05½	.06
Charleston, S. C.	*.05½	.06½	*.05½	.06
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.05½		.05¼	.05½
U. S. Motor, below 65 octane number	.04½	.05	.04½	.05

*Contract price.

Naphthas

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
50-52 450 (blending)	.03⅝	.03⅞	.03¾	.04
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.05¾	.06	.05¾	.06
ARKANSAS—				
48-50 450 (blending)	.04½		.04¾	
CHICAGO Based on Okla. (Group 3)—				
50-52 450 (blending)	.03⅝		.03½	
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-320 e.p.	.05¾	.06	.05¾	.06
Lacquer diluent, 180 i.b.p.-250 e.p.	.07½	.07¾	.07½	.07¾
Lacquer diluent, 140 i.b.p.-200 e.p.	.08½	.09	.08½	.09
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.05½	.05¾	.05½	.05¾
Stoddard solvent, 300 i.b.p.-410 e.p. over 100° flash	.05¼	.05½	.05¼	.05½
Pet. thinner, 290, 300 i.b.p.-415 e.p., over 83° flash	.04½	.04¾	.04½	.04¾
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05½	.05¾	.05½	.05¾
Petroleum spirits	.04	.05¼	.04	.05¼

Natural Gasolines

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
Grade 18-55	.03⅛	.03¼	.03⅜	.03½
Grade 26-70	.02⅝	.02¾	.02⅞	.03
Grade 30-70	.02½		.02⅝	.02¾
*Low pressure grades:				
15 lb. v.p. (max.)	.03½		.03⅝	.03¾
11 lb. v.p. (max.)	.04		.04	
NORTH TEXAS—				
Grade 18-55	.03⅛	.03¼	.03⅜	.03½
Grade 26-70	.02½	.02¾	.02⅞	.03
Grade 30-70	.02⅝		.02⅝	
*Low vapor pressure grades:				
15 lb. v.p. (max.)	.03⅜		.03⅝	.03¾
11 lb. v.p. (max.)	.03⅞	.04	.04	
NORTH LOUISIANA—				
Grade 26-70	.02¾	.02⅞	.03⅛	
CALIFORNIA—				
75-78 375	.04¼	.05½	.04	.05

Note—Grades 18-55, 26-70 and 30-70 are three of 24 grades adopted by the Natural Gasoline Association of America effective January 1. The grades are based on pounds vapor pressure and amount evaporated at 140° F. While not exactly the same specifications apply, Grade 18-55 corresponds to the former Grade A, Grade 26-70 to former Grade AA and Grade 30-70 to former Grade BB.

*All low vapor pressure grades have minimum recovery of 96 (natural gasoline method.)

Kerosenes

(All kerosenes water white)

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
41-43	.03¼		.03	.03⅜
42-44	.03⅜	.03½	.03⅛	.03¼
NORTH TEXAS—				
40-41	.03	.03⅛	.02¾	.02⅞
41-43	.03⅛	.03¼	.02⅞	.03
†NORTH LOUISIANA—				
41-43	.03¾		.03¾	
42-44	.04		.04	
†ARKANSAS—				
41-43	.03¾		.03¾	
PENNSYLVANIA (inland refineries)—				
45	.04⅝		.04⅝	
46	.04¾		.04¾	
47	.04¾	.05	.04¾	.05
CHICAGO (Based on Group 3)—				
41-43	.03½	.03¼	.03	.03⅛
42-44	.03¼	.03⅜	.03⅛	.03¼
*CALIFORNIA—				
38-40 high burning test	.04	.04¾	.04	.04¾
NEW YORK (Bayonne, N. J.)—				
41-43	.05½		.05½	
GULF COAST (domestic)—				
41-43 water white	.04½	.04¾	.04¼	.04½

*For Pacific Coast consumption.
†For Arkansas, Louisiana and Mississippi delivery.

Tractor Fuels*

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
39-40 prime white	.03	.03⅛	.02⅞	.03
38-40 light straw	.02⅞	.03	.02¾	.02⅞
NORTH TEXAS—				
38-40 light straw	.02¾		.02⅝	.02¾
CHICAGO (Based on Group 3)—				
38-40 light straw	.03	.03⅛	.02⅞	.03⅛
PENNSYLVANIA (inland refineries)—				
41-43 prime white	.04¼		.04¼	

*There are no standard specifications for tractor fuels. Grades commonly sold have flash under 175° F. (open cup) and under 575° F. endpoint and less than .2 per cent sulphur. Tractor fuels are available from all Mid-Continent refining groups at prices in line with the Oklahoma market taking into consideration differentials in freight rates.

Furnace Oils*

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
32-36 straw	.02¾		.02⅝	.02¾
36-38 straw	.02⅞		.02¾	
38-40 straw	.02⅞	.03	.02¾	.03
39-41 prime	.03	.03⅛	.02¾	.03
NORTH TEXAS—				
38-40 straw	.02⅞	.03⅛	.02¾	
†NORTH LOUISIANA—				
36-40	.03⅛	.03¼	.03	.03⅛
†ARKANSAS—				
32-36	.03	.03⅛	.03	
CHICAGO (Based on Group 3)—				
32-36 straw	.02⅝	.02¾	.02⅝	.02¾
38-40 straw	.02⅞	.03	.02⅞	.03
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03½		.03½	
NEW YORK (Bayonne, N. J.)—				
32-36	.04		.04	
36-40	.05		.05	
21 (industrial)	.03½		.03½	

*Above prices are for furnace oils of zero cold test under 190° F. flash and good odor.

†For Arkansas, Louisiana and Mississippi delivery.

Gas Oil, Diesel Oil and Fuel Oil

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
32-36 (G.O.) cracking stock	.01¾	.02	.01¾	.01⅞
U.G.I. (G.O.)	.01¾	.02⅛	.01¾	.02
32-36 zero to 15 (G.O.) high flash	.02¼	.02½	.02¼	.02⅜
28-30, zero to 10	.80	.82½	.77½	.80
26-30, zero to 10	.72½	.75	.70	.75
24-26	.52½	.57½	.50	.55
20-22	.50		.47½	.50
16-20	.45	.47½	.42½	.47½
Below 16	.40	.45	.40	.42½
NORTH TEXAS—				
32-36 (G.O.) industrial	.01¾		.01⅝	.01¾
22-26	.40	.45	.37½	.42½
Below 20	.35	.40	.35	.40
NORTH LOUISIANA—				
32-36 (G.O.) zero	.02½	.02⅝	.02½	
14-16	.37½	.40	.35	.40
†ARKANSAS—				
32-36 (G.O.) zero high flash	.02½	.02⅝	.02½	
14-16	.37½	.40	.35	.40
CHICAGO (Based on Group 3)—				
32-36 (G.O.) industrial	.01¾	.01⅞	.01⅝	.01¾
28-30 (zero)	.80	.90	.77½	.82½
22-26	.60	.65	.55	.60
18-22	.47½	.50	.45	.50
Below 18	.35	.40	.30	.35
PENNSYLVANIA (inland refineries)—				
36-40	.03¼	.03½	.03¼	.03½

Note—Fuel oils of more than 40 cold test generally 5 to 10 cents per barrel less in all areas than shown in above tables.

†For Arkansas, Louisiana and Mississippi delivery.

CALIFORNIA—				
30-34 (G.O.) per bbl.	.75	.85	.75	.85
27 plus Diesel	.75	.85	.75	.85
15-19 bunker (at tidewater)	.55	.65	.55	.65
15-19 (cargo lots)	.50	.60	.50	.60
15-19 (tank car)	.40	.60	.40	.60
GULF COAST—				
28-30 (G.O.)	.03¼	.03⅜	.03¼	.03⅜
28-30 Diesel	1.50		1.50	
Bunker C (bulk cargoes)	.50	.52½	.50	.52½
Bunker C (bunkers)	.60		.60	
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.04		.04	
*28-30 Diesel	1.65		1.65	
26-30 Diesel (tank cars)	.04		.04	
†Bunker C	.75		.75	

*Lighterage 6½ cents per barrel.
†Lighterage 5 cents per barrel.

Petroleum Coke*

Prices per ton f.o.b. refineries in Chicago area.

Breeze (screenings)	4.50	5.00	4.50	5.00
Still runs	4.75	5.00	4.75	5.00
Lump and egg	7.50		7.50	

*Refineries will absorb freight to 80 cents a ton.

Neutral Oils

(Viscosity at 100° F. and color)

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
Zero to 10 Cold Test:				
150-3	.06¼	.06½	.06¼	.06½
180-3	.07½	.07¾	.07½	.07¾
180-4	.07	.07¼	.07	.07¼
200-3	.08¼	.08½	.08¼	.08½
200-4	.08	.08¼	.08	.08¼
240-3	.09¾	.10	.09¾	.10
240-4	.09½	.09½	.09¼	.09½
280-3	.11¼	.11½	.11¼	.11½

280-4	.10¼	.10½	.10¼	.10½
300-3.5	.11¾	.12	.11¾	.12
350-3.5	.12¼	.12½	.12¼	.12½
400-4	.12¾	.13	.12¾	.13
500-4.5	.13¼	.13½	.13¼	.13½
100-2 paraffin oil	.04¼	.04½	.04¼	.04½
15-30 Cold Test:				
200-3	.07¾	.08	.07¾	.08
200-4	.07½	.07¾	.07½	.07¾
240-3	.09¼	.09½	.09¼	.09½
240-4	.08¾	.09	.08¾	.09
280-3	.10¾	.11	.10¾	.11
280-4	.09¾	.10	.09¾	.10
PENNSYLVANIA—				
150 vis., No. 3, 400-405:				
Zero pour test	.13½	.15	.14	.15
10 pour test	.12½	.14	.13	.14
15 pour test	.10½	.12	.11½	.12
25 pour tèst	.10		.10	
30 pour test	.09¾		.09¾	
180 vis., No. 3, 25 pour test	.13	.14	.13	.14
200 vis., No. 3:				
Zero pour test	.20	.21	.20	.21
10 pour test	.18½	.19	.19	.20
15 pour test	.17	.18	.17	.18
25 pour test	.15½	.16½	.15½	.16½
30 pour test	.15½	.16	.15½	.16
GULF COAST—				
Pale Oils:				
100-2-2½	.05		.05	
200-3	.06¼	.06½	.06¼	.06½
300-3	.06¾	.07	.06¾	.07
500-3½	.08	.08¼	.08	.08¼
750-3½	.09	.09½	.09	.09½
1,200-3½	.10½	.10¾	.10½	.10¾
2,000-4	.12	.12½	.12	.12½
Red Oils:				
200-5-6	.05	.05¼	.05	.05¼
300-5-6	.05½	.05¾	.05½	.05¾
500-5-6	.06¾	.07	.06¾	.07
1,200-5-6	.09½	.10	.09½	.10
2,000-6 plus	.11	.11½	.11	.11½
CALIFORNIA—				
Pale Oils:				
100-2½-3	.07¾	.08	.07¾	.08
200-2½-3	.07¾	.08	.07¾	.08
300-3-3½	.08¼	.08½	.08¼	.08½
350-3-4	.08¾	.09	.08¾	.09
400-3-4	.09¼	.09¾	.09¼	.09¾
450-3-4	.09¾	.10	.09¾	.10
550-3-4	.10¼	.11	.10¼	.11
Red Oils:				
200-4½-5	.07	.07¼	.07	.07¼
300-5-6	.07½	.07¾	.07½	.07¾
350-5-6	.07¾	.08	.07¾	.08
400-5-6	.08	.08¼	.08	.08¼
450-5-6	.08¼	.08½	.08¼	.08½
500-5-6	.08½	.08¾	.08½	.08¾
600-5-6½	.08¾	.09	.08¾	.09
700-6½ plus	.09	.09¼	.09	.09¼
750-6½ plus	.09	.09½	.09	.09½
900-6½ plus	.12	.13½	.12	.13½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
630 light green	.07¾	.08	.07¾	.08
600 light green S.R.	.05	.06	.05	.06
600 dark green S.R.	.04	.04½	.04	.04½
Bright Stocks:				
190-200 D	.18		.18	
150-160 D, 0-10	.17		.17	
150-160 D, 10-25	.16½		.16½	
150-160 D, 25-40	.16		.16	
150-160 E	.16		.16	
PENNSYLVANIA—				
600 S.R.	.12	.12½	.12	.12½
650 S.R.	.14	.15	.14	.15
600 Pennsylvania flash	.15¼	.16	.15¼	.16
630 D filtered	.20¼	.21	.20¼	.21
600 E filtered	.15¼	.15½	.15¼	.15½
Pennsylvania Grade bright stock:				
Bright Stock, No. 8 color, 145-50 vis. 210-540-550 flash:				
10 pour test	.24	.25	.25	.26
15 pour test	.22	.23	.23	.23½
25 pour test	.20	.21	.20	.21

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Oct. 11		Oct. 4	
124-126 white crude scale	.01¾		.01⅝	.01¾
PENNSYLVANIA—				
122-124	.01⅞	.02	.01⅞	.02
124-126	.02		.02	
NEW YORK (Bayonne, N. J.)—				
Refined Wax:				
120-122	.02⅝		.02⅝	
125-127	.02⅞		.02⅞	

130-132	.03½		.03½	
133-135	.04⅛		.04⅛	
135-137	.04¼		.04¼	
Petrolatum in barrels in carload lots:				
Dark green	.01¾		.01¾	
Amber	.02⅛		.02⅛	
Extra amber	.02½		.02½	
Cream	.04⅝		.04⅝	
Lily white	.05½		.05½	
Snow white	.06½		.06½	

Export Prices

GASOLINE

GULF COAST—	Oct. 11		Oct. 4	
U. S. Motor	.04¼	.04½	.04¼	.04½
60-62 400	.04¼	.04½	.04¼	.04½
61-63 390	.04⅜	.04½	.04⅜	.04½
64-66 375	.04½	.04¾	.04½	.04¾
LOS ANGELES, CALIF.—				
U. S. Motor, 53-55 437 e.p.	.03¾	.04¼	.03¾	.04¼
U. S. Motor, 65 octane num.	.05		.05	
U. S. Motor, 67 octane num.	.05¼		.05¼	
U. S. Motor, 69 octane num.	.05½		.05½	
58-60 400 endpoint gasoline	.04¼	.05	.04¼	.05

KEROSENE

GULF COAST—				
41-43 prime white	.04⅜	.04½	.04⅜	.04½
41 water white	.04½		.04½	.04¾
LOS ANGELES, CALIF.—				
41-43 water white	.03¾	.04¼	.03¾	.04¼
NEW YORK (f.a.s.) (in bbls.)—				
600 filtered	.23		.23	
600 Warren E	.20½		.20½	
600 S.R. unfiltered	.20		.20	
650 S.R. unfiltered	.22½		.22½	
600 flash S.R.	.23½		.23½	
630 flash S.R.	.28½		.28½	
Bright stock, No. 8 color	.27		.27	
Bright stock, No. 6½ color, dil.	.26½		.26½	

NEUTRAL OILS

NEW YORK—Pale Engine Oil, Bulk (vis. at 100):				
230-33¾	.10	.10¼	.10	.10¼
180-31¼	.09½	.09¾	.09½	.09¾
100-2¼	.05½	.06	.05½	.06
Red Engine Oil, Bulk (vis. at 100):				
300-6½	.09½	.09¾	.09½	.09¾
250-6	.09	.09¼	.09	.09¼
200-6	.08¼	.08½	.08¼	.08½

Crude Oil Prices

Oklahoma, Kansas, North and East Central Texas

East Texas (Apr. 1, 1932)†	$ .98
East Texas (Apr. 11, 1932)‡	.98
Corsicana heavy*	.64
Other fields	See gravity table

†Posted by Magnolia Petroleum Co., Sinclair Refining Co., Panola Pipe Line Co., Tidal Refining Co. and The Texas Company. ‡Gulf Pipe Line Co. and Atlas Pipe Line Co. *Magnolia Petroleum Co.

Eastern States

JOSEPH SEEP PURCHASING AGENCY
(Effective October 3, 1932)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$1.72
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.42
Penna Grade Oil in Eureka Pipe Line Lines	1.37
Penna Grade Oil in Buckeye Pipe Line Lines	1.22
Corning Grade Oil in Buckeye Pipe Line Co.'s line (Oct. 4, 1932)	.85
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 10, 1931)	.60

PENNZOIL CO.
(Effective October 3, 1932)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	$1.67
Includes Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	1.66
Includes Titusville district.	
Group C	1.65
Includes Turkey and Tidiout districts.	
Group D	1.64
Includes Bear Creek and Porkey districts.	
Group E	1.62
Includes Bideman, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.	
Price depends on length of pipe line haul to plant at Oil City.	

TIDE WATER PIPE CO.
(Effective October 3, 1932)

Bradford, Pa.	$1.72
Allegany, N. Y.	1.72

PURE OIL CO.
(Effective October 3, 1932)

Cabin Creek, W. Va.	$1.37
Bradford Hollow, W. Va.	1.37
Kelly's Creek, W. Va.	1.37

Texas Panhandle

Gray County, Wheeler County and Carson-Hutchinson Counties....See gravity table

Rocky Mountain States

OHIO OIL CO.-MIDWEST REFINING CO.

Iles, light (Aug. 24, 1931)	$ .75
Iles, heavy (Aug. 24, 1931)	.53
Fort Collins (Apr. 11, 1932)	.86
Florence (Apr. 11, 1932)	.80
Wellington (Apr. 11, 1932)	.76
Greasewood Dome, Colo. (Apr. 11, 1932)	1.00
Dutton Creek (Apr. 11, 1932)	.82
Rock Creek, Wyo. (June 1, 1932)	.90
Frannie, light (Nov. 3, 1931)	.61
CRUDE OIL PRICES—	
Frannie, heavy (Nov. 3, 1931)	.51
Salt Creek	Mid-Continent gravity table
LaBarge	Mid-Continent gravity scale
Big Muddy (Apr. 11, 1932)	.98
Grass Creek (June 1, 1932)	1.10
Elk Basin (June 1, 1932)	1.10
Lance Creek (Apr. 11, 1932)	1.15
Poison Spider (Mar. 5, 1931)	.70
Notches (Mar. 14, 1927)	.65
Hudson (June 2, 1931)	.65
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage (Apr. 15, 1931)	.98
Lost Soldier (Apr. 12, 1932)	.80
Hamilton Dome (Nov. 3, 1931)	.45
Greybull (Apr. 11, 1932)	1.20
Cat Creek (Apr. 11, 1932)	1.20
Pondera (Nov. 3, 1931)	.90
Sunburst, Mont. (Apr. 11, 1932)	1.05
Hogback, N. Mex. (Aug. 24, 1931)	.80
Border, Mont.	1.55
Red Coulee, Alberta	1.55
Lea County, N. Mex. (Apr. 1, 1932)*...	.65
Maljamar (Apr. 11, 1932)	.60
Artesia-Jackson (Apr. 11, 1932)	.65

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull, Hogback, and Iles by Midwest Refining Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro Oil & Refining Co.

*Posted by The Texas Company. Humble Oil & Refining Co. met this price effective April 11.

West Texas

Iatan and Westbrook	Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Mitchell, Ector, Winkler and Pecos Counties*	$ .65
Lea County, N. Mex. (See Rocky Mountain States.)	
Toborg, Pecos County (Apr. 11, 1932)†..	.55

*Effective April 1, 1932, Magnolia Petroleum Co., The Texas Company. Effective April 11, Humble Oil & Refining Co. and Gulf Pipe Line Co. and Stanolind Oil & Gas Co. in Winkler County. †Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers .....

.....See gravity table	
Jennings, La. (Apr. 11, 1932)*	$ .75
Lockport, La.	See Gulf Coast gravity table
Refugio, light	See gravity table
Refugio, heavy (Apr. 11, 1932)‡	.80
Markham (Apr. 11, 1932)§	
.....See Gulf Coast gravity schedule	
High Island (Apr. 11, 1932)¶	
.....See Gulf Coast gravity schedule	

*Gulf Refining Co. †Magnolia Petroleum

(Continued on Next Page)

Crude Oil Gravity Table

	Kansas and Oklahoma	North and Central Texas	East Central Texas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Salt Creek and LaBarge, Wyoming	North Louisiana and Arkansas	Gulf Coast (Texas-Louisiana)	Cameron, Meadows, Louisiana	Iowa and Lockport, Louisiana
	1	2	3	4	5	6	7	8	9	10
Below 25 degrees	....	....	$.67	....	....	....	$.68	$.80	$.70	$.80
25-25.9 degrees	....	....	.67	....	....	....	.70	.81	.71	.81
26-26.9 degrees	....	....	.67	....	....	....	.72	.82	.72	.82
27-27.9 degrees	....	....	.67	....	....	....	.74	.83	.73	.83
28-28.9 degrees	....	....	.76	....	....	....	.76	.84	.74	.84
Below 29 degrees	$.76	$76	....	....	....	$76	....	....	....	....
29-29.9 degrees	.78	.78	.78	....	....	.78	.78	.85	.75	.85
30-30.9 degrees	.80	.80	.80	....	....	.80	.80	.86	.76	.86
31-31.9 degrees	.82	.82	.82	....	....	.82	.82	.87	.77	.87
32-32.9 degrees	.84	.84	.84	....	....	.84	.84	.88	.78	.88
33-33.9 degrees	.86	.86	.86	....	....	.86	.86	.89	.79	.89
34-34.9 degrees	.88	.88	.88	$.76	$.66	.88	.88	.90	.80	.90
35-35.9 degrees	.90	.90	.90	.78	.68	.90	.90	.91	.81	.91
36-36.9 degrees	.92	.92	.92	.80	.70	.92	.92	.92	.82	.92
37-37.9 degrees	.94	.94	.94	.82	.72	.94	.94	.94	.84	.94
38-38.9 degrees	.96	.96	.96	.84	.74	.94	.96	.96	.86	.96
39-39.9 degrees	.98	.98	.98	.86	.76	.94	.98	.98	.88	.98
40 degrees and over.	1.00	1.00	1.00	.88	.78	.94	1.00	1.00	.90	1.00

Note—Magnolia Petroleum Co.'s prices in Oklahoma, North Texas and Central Texas, effective April 1, are the same as above given in Columns 1 and 2, excepting that the schedule begins with below 28 degrees, 67 cents; 28-28.9 degrees, 76 cents. The Empire Pipe Line Co. met the Magnolia prices in Kansas and Oklahoma; the White Eagle Oil Corp. in Kansas and the Pure Oil Co., in Oklahoma.

Column 1—Effective April 1, 1932, Continental Oil Co. in Oklahoma and Kansas; Barnsdall Refineries, Inc., and Standish Oil Co. (Phillips Petroleum Co.), in Oklahoma and Kansas; Skelly Oil Co., Kanotex Refining Co., Derby Oil Co., Vickers Petroleum Co., in Kansas; Magnolia Petroleum Co. and Pure Oil Co., in Oklahoma (see note above); White Eagle Oil Corp., in Kansas (see note above); The Texas Company in Oklahoma. Effective April 11, 1932, Stanolind Crude Oil Purchasing Co. in Oklahoma and Kansas; Gypsy Oil Co., Mid-Continent Petroleum Corp., Champlin Refining Co., Eason Oil Co., Pepper Gasoline Co. and Carter Oil Co. in Oklahoma. Carter Oil Co.'s schedule begins at below 25 degrees, 68 cents, with 2 cents added for each degree upward.

Column 2—Continental Oil Co., effective April 1, in North Texas only; followed on same day by The Texas Company in North and Central Texas; Magnolia Petroleum Co. in North and Central Texas (see note above); effective April 11, the Humble Oil & Refining Co., Gulf Pipe Line Co. and Stanolind Crude Oil Purchasing Co.

Column 3—Effective April 1, 1932, the Magnolia Petroleum Co., effective April 11, 1932 Humble Oil & Refining Co.

Column 4—Effective April 1, 1932, Magnolia Petroleum Co., effective April 2, the Philtex Oil Co. (Phillips Petroleum Co.), but its schedule was carried down to below 30 degrees at 66 cents, with 2 cents added for each degree upward. Effective April 11, other companies met Continental schedule.

Column 5—Effective April 1, 1932, Magnolia Petroleum Co., effective April 2, Philtex Oil Co., excepting that latter company carried its schedule down to below 30 degrees at 56 cents, with 2 cents added for each degree upward. Effective April 11, Continental Oil Co. and Gulf Pipe Line Co. met Magnolia Petroleum Co. prices.

Column 6—Midwest Refining Co., effective April 11, 1932.

Column 7—The Texas Company, effective April 1, 1932; Magnolia Petroleum Co., effective April 6, 1932; Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Stanolind Oil & Gas Co. (in Pine Island and Pleasant Hill and in Marion County, Texas) and Gulf Refining Co., effective April 11, 1932.

Column 8—The Texas Company, effective April 1, 1932; Sun Oil Co., April 1, 1932; Humble Oil & Refining Co., effective April 11, 1932; Gulf Pipe Line Co., effective April 11, 1932. Gulf's gravity scale ends with a top of 35 and above at 91 cents. Humble Oil & Refining Co., effective July 15, 1932, posted following prices for Conroe crude: 35-35.9 degrees, 90 cents; 36-36.9 degrees, 92 cents; 37-37.9 degrees, 94 cents; 38-38.9 degrees, 96 cents; 39-39.9 degrees, 98 cents; 40 and above, $1.

Column 9—Magnolia Petroleum Co., effective April 6, 1932.

Column 10—Magnolia Petroleum Co., effective April 6, 1932.

(California Crude Oil Prices on Page 30)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

October 11, 1932

TAXES

The gasoline quotations given in the following tables include the 1-cent Federal tax as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third or competitive grade is generally available at 1.5 or more cents per gallon under the service station price for the regular grade. Ethyl Gasolines are sold 3 cents above the service station price for the regular grade.

Standard Oil Co. (Indiana)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Chicago	15.1	15 1	4 0	10.0
Decatur, Ill.	17 6	15.6	4 0	10 1
E. St. Louis	16 9	16 9	4 0	9.3
Joliet	17.6	15.6	4.0	8.6
Peoria	17.6	15 6	4 0	10.1
Quincy	17 4	15 0	4 0	9 0
Davenport, Ia.	17.7	17 0	4 0	10 4
Des Moines	17.7	15 9	4 0	8.0
Keokuk	17.7	17 7	4 0	10.4
Sioux City	17.3	17 3	4 0	10.0
Duluth, Minn.	18.7	18.7	4 0	11 0
Mankato	18.3	18.3	4.0	8 1
Minneapolis	16 4	15.4	4.0	11.0
LaCrosse, Wis.	19 4	19 4	5 0	11.1
Milwaukee	17.3	17.3	5 0	10.0
Madison	18.5	18.5	5 0	10.2
Detroit, Mich.	12 6	12.5	4 0	9.0
Grand Rapids	17 5	16 5	4 0	10.3
Saginaw	16.6	15 6	4.0	10 6
Evansville, Ind.	18.2	18.2	5 0	†13.9
Indianapolis	18.4	18.4	5 0	†14.1
South Bend	18 7	16.7	5 0	†14 4
Fargo, N. D.	20 1	20.1	4.0	13 0
Huron, S. D.	19.5	19.5	5.0	11 8
Sioux Falls	19 0	19 0	5 0	10 0
K. C., Mo.*	15 1	15.1	4.0	4 7
Springfield*	17.0	17.0	4.0	8 6
St. Louis*	13 5	11 0	4 0	7.5
St. Joseph*	15 0	15 0	4.0	7 5
Wichita, Kans.	15 9	14 0	4 0	7.0
Bartlesville, Ok.	15.5	13.0	5.0	8.0

*State tax 2 cents, 1-cent city tax and 1-cent Federal tax.

†Includes 4-cent tax. Buyers of kerosene not used as motor fuel can secure refund of tax.

Effective November 4—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective January 1—Discounts on Q.D.A. on 500 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

Stanolind Furnace Oil in Chicago

Effective July 1, 1932, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), 100 gallons or more, 6 cents; No. 2 (30-34 stw. zero), 150 gallons or more, 5.50 cents. No. 3 (22-26 zero), 200 gallons or more 4.75 cents; No. 4 (12-16 zero), 400 gallons or more, 4 cents. Viscosity of No. 4, 90-115 at 100° F.

Fuel Oils

Chicago Oil Heat Institute Prices

Spot market prices on 350 gallons or over deliveries, and top prices on contracts, respectively: 38-40, 6½ cents and 8 cents; 32-36, 6 cents and 7½ cents; 28-30, 5¾ cents and 6¾ cents; 24-26, 4½ cents and 5½ cents; 18-22, 4¼ cents and 5¼ cents. On deliveries of less than 350 gallons the spot price is one-half cent higher.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Dallas, Tex.	12.5	15 0	5.0	7.0
Fort Worth	12 5	15 0	5.0	9 0
Houston	13 5	16 0	5.0	8.0
San Antonio	13.5	16 0	5.0	9 0
El Paso	15.0	17 0	5 0	11 0
Texarkana	*16 0	16 0	5.0	†11 0
Muskogee, Ok.	11.5	14 0	5 0	8 0
Okla. City	12 5	15.0	5.0	8.0
Tulsa	10 5	13.0	5 0	8 0
Ft. Smith, Ark.	*14 5	*14 5	7.0	†9 0
Little Rock	*16 5	*16.5	7.0	†9.0

*Less 2½ cents to dealers. †Less 2 cents to dealers.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Atlanta, Ga.	21 0	21 0	7.0	11 0
Augusta	17 5	17 5	7 0	11.0
Macon	21 0	21.0	7 0	13.0
Savannah	19 0	19 0	7 0	12.5
Birm'ham, Ala.	19.0	19.0	7 0	11 0
Mobile	20 0	20.0	7 0	8 0
Montgomery	21 0	21 0	7 0	13.5
Jackson, Miss.	18.0	18 0	7 0	10.0
Vicksburg	18 5	18.5	7 0	10 5
Jack'ville, Fla.	15.0	15.0	8 0	10 0
Miami	16 0	16 0	8 0	12.5
Pensacola	19 0	19.0	8.0	12 0
Tampa	16.0	16.0	8.0	12 0
Lexington, Ky.	17 5	17 5	6.0	10.5
Covington	18 0	18.0	6.0	10 5
Louisville	17 0	17 0	6 0	9.0
Paducah	18.0	18.0	6.0	8.0

A third grade "Kyso Green" is sold at a price generally 3 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent tax. To Mobile state tax add 1-cent city tax. Dealers receive discount of 3 cents off tank wagon price throughout territory.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Denver, Colo.	16 0	19 0	5.0	12 5
Pueblo	16.0	19 0	5 0	12.5
Grand Jctn.	20 0	23.0	5 0	14 5
Casper, Wyo.	17.0	20.0	5.0	10 0
Cheyenne	18 0	21 0	5.0	11 5
Butte, Mont.	20 0	23.0	6 0	17 0
Billings	23 0	26 0	6 0	15.5
Great Falls	23.0	26 0	6 0	17.0
Helena	22 0	25.0	6 0	17.0
Salt Lake, Utah	18 0	21 0	5 0	16.0
Albu'que, N. M.	16 0	19 0	*7.0	14.0
Boise, Idaho	22 5	25.5	6.0	18.0
Twin Falls	22 5	25.5	6.0	18.0

*One-cent city tax.

Central South District

STANDARD OIL CO. (LOUISIANA)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
N. Orleans, La.	17 5	17 5	*7.0	†11 0
Baton Rouge	16.0	16.0	6 0	†10 0
Alexandria	17 5	17 5	*7 0	†10.0
Lafayette	17 5	17.5	*7.0	†10 0
Lake Charles	17 5	17 5	*7.0	†10.0
Shreveport	15 5	15.5	6 0	†10.0
Knoxville, Tenn.	20.0	20.0	8 0	11 5
Memphis	15.0	15 0	8 0	9.0
Chattanooga	20.5	20 5	8 0	11 5
Nashville	19.5	19 5	8 0	11 0
Bristol	19 0	19.0	8.0	12.0
Lt. Rock, Ark.	17 5	17.5	7.0	9.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

Two-cent discount off kerosene tank wagon price and 2½ cents off gasoline tank wagon price to dealer and commercial accounts.

Ohio

STANDARD OIL CO. (OHIO)*

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Ohio points	16 5	17.0	5.0	*12.0

*Two cents off on gasoline tank wagon to dealers and commercial accounts; 2½ cents off tank wagon on kerosene to dealers.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Omaha	16.9	17.9	5 0	10 25
McCook	19.0	19.0	5 0	11 75
Norfolk	18 75	18 75	5 0	10.75
N. Platte	19.0	19.0	5 0	11 5
Scottsbluff	19 0	19.0	5.0	11 25

Note—Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

New York and Part of New England District

STANDARD OIL CO. (NEW YORK)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Albany, N. Y.	14.5	15 5	4 0	9 0
New York	15 0	15.0	4 0	9.5
Buffalo	15 5	16.5	4.0	9 0
Rochester	15.5	16 5	4 0	9 0
Syracuse	15.5	16.5	4 0	9.5
Boston, Mass.	14.0	15 0	4.0	8.0
Augusta, Me.	17 0	18 0	4 0	9 0
Manch'tr, N. H.	17 0	18.0	5 0	8.0
Burlington, Vt.	16.5	17.5	5.0	8.5

Pennsylvania-Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Pittsburgh, Pa.	15 5	16.5	4 0	10 0
Philadelphia	15 0	16 0	4 0	10.0
Scranton	15 5	16.5	4 0	10.0
Allentown	15.5	16.5	4 0	10 0
Altoona	15.5	16 5	4.0	10 0
Erie	15 5	16.5	4 0	10.0
Dover, Del.	15 5	16 5	4.0	10.0
Wilmington	15 5	16 5	4.0	10.0
Springf'd, Mass.	15 0	16.0	4 0	8.0
Worcester	15.0	16 0	4.0	8 0
Boston	14 0	15 0	4.0	8 0
Providence, R.I.	13.0	14.0	3.0	8.0
Hartford, Conn.	14 0	15 0	3 0	8 0
New Haven	14 0	15.0	3.0	8.0

Atlantic Coast District

STANDARD OIL CO. (NEW JERSEY)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax	Kero. tank wagon
Atl'tic City, N.J.	14.7	15.7	4 0	11 2
Newark	14 0	15.0	4 0	8 5
Annapolis, Md.	15.3	16.3	5.0	10 0
Baltimore	14 7	15 7	5 0	7 0
Cumberland	16.2	17 2	5 0	11.7
Wash'g'n, D. C.	13 2	14.2	3 0	10.9
Danville, Va.	17.4	18.4	6 0	11 9
Norfolk	15 8	16 8	6.0	10 3
Petersburg	16 9	17.9	6.0	11.4
Richmond	16 2	17.2	6 0	10 7
Roanoke	17 4	18.4	6.0	11 9
Charles'n, W.Va.	16.1	17 1	5 0	11 6
Parkersburg	14 7	15 7	5 0	10.2
Wheeling	15 7	15 7	5 0	11.2
Charlotte, N. C.	19 0	20 0	7 0	12.5
Hickory	19.2	20 2	7 0	12 7
Mt. Airy	19.3	20.3	7.0	12 8
Raleigh	20.0	20.0	7 0	12 3
Salisbury	19 1	20 1	7 0	13 6
Charleston, S.C	16 8	17 8	7.0	10 3
Columbia	18.7	19.7	7 0	12 2
Spartanburg	19.0	20.0	7.0	12.5

Two cents per gallon discount off tank wagon price of gasoline to dealers except Washington, D. C., and States of Maryland and New Jersey, where discount is 3 cents. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey.

Naphtha

	Tank Wagon	Car
Oleum spirits	10.7	6.23
V.M.P. naphtha	12 7	7 23
Cleaners' naphtha	15.2	9.23
Stanisol	15.2	9.23

Tank wagon prices f.o.b. Chicago January 6, 1932. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline Tank truck†	Gasoline Posted retail	Gasoline Incl'ds tax	Kero. tank wagon
Fresno	19.5	18.5	4 0	17 0
San Francisco	19.0	18 0	4.0	15 5
Los Angeles	18.5	17.5	4 0	15 5
Reno, Nev.	23 0	22.0	5 0	19 0
Portland, Ore.	20 0	19 0	5 0	16 5
Seattle, Wash.	22 0	21.0	6 0	16 5
Tacoma	22.0	21 0	6 0	16 5
Spokane	25.5	24 5	6.0	20 5
Phoenix, Ariz.	19.5	21.5	6 0	20 5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

TANK WAGON MARKETS

Standard Oil Co. (Indiana) reduced the gasoline station price to 17 cents in Davenport, Iowa, October 3. On October 6 it raised the tank wagon price in Grand Rapids, Mich., to 17.5 cents and the station price to 16.5 cents. On October 4 it reduced the tank wagon price in St. Joseph, Mo., to 15 cents, and on October 1 it reduced the tank wagon price in St. Louis, Mo., to 13.5 cents. On September 30 it reduced the tank wagon price in Minneapolis, Minn., to 16.4 cents.

Standard Oil Co. (Kentucky) on October 6 advanced the tank wagon and station gasoline prices 2 cents to 20 cents at Mobile, Ala. On the same date it reduced the tank wagon and station prices 2 cents in Tampa, Fla., to 16 cents. On October 4 it advanced the tank wagon and station price in Birmingham, Ala., to 19 cents. On the same date it reduced the kerosene price in Pensacola, Fla., to 12 cents and in Louisville, Ky., to 9 cents.

Standard Oil Co. of California on Oc-

(Continued on Page 30)

Crude Oil Prices

(Continued from Preceding Page)

Co. ‡Humble Oil & Refining Co. §The Texas Company. †Yount Lee Pipe Line Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$ .60
Urania, La. (Apr. 12, 1932)	.60
East El Dorado, Ark. (Apr. 6, 1932)	.60
Stephens, Ark., below 29° (Apr. 12, 1932)	.60
Stephens, Ark., 29° and above (Apr. 12, 1932)	.60
Other fields	See gravity table

Note—Smackover, all grades, The Texas Company, April 1, 1932; Magnolia Petroleum Co., April 6, 1932; Standard Oil Co. of Louisiana, Gulf Refining Co. and Louisiana Oil Refining Co., April 11, 1932. Urania posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co.; East El Dorado by Magnolia Petroleum Co.; effective April 6, 1932; by Gulf Refining Co., effective April 11, 1932; Stephens, Ark., by Louisiana Oil Refining Co. and Atlantic Oil Producing Co.

South Central and Southwest Texas

Darst Creek (Apr. 1, 1932)*	$ .70
Luling (Apr. 1, 1932)*	.60
Mirando (Apr. 1, 1932)*	.59
Pettus (Apr. 11, 1932)‡	1.00
Salt Flat (Apr. 11, 1932)‡	.70
Thrall§	
Lytton Springs (Lockhart) (Apr. 1, 1932)*	.60
Dobrowolski§	
Same as Mid-Continent gravity scale up to and including 38-38.9°	
Somerset†	
Same as Mid-Continent gravity scale up to and including 38-38.9°	

*Magnolia Petroleum Co., The Texas Company, Humble Oil & Refining Co. posted 80 cents for Mirando, April 11. §Thrall prices same as North Central Texas less 19½ cents per cwt. freight. †Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products. ‖Pioneer Oil & Refining Co. ‡Humble Oil & Refining Co.

Middle Western States

OHIO OIL CO.
(Effective April 11, 1932)

Lima	$1.14
Wooster	1.34
Illinois	1.19
Indiana	.75
Princeton	1.10
Plymouth	Shut in
Western Kentucky	1.05
Midland, Mich. (July 13, 1932)*	.85
Muskegon (July 14, 1932)†	
Mid-Continent gravity scale	
Muskegon (June 30, 1932)‡	.95
Somerset, Ky. (Apr. 25, 1932)	.85
Hart County, Ky. (June 16, 1932)§	1.00

*Posted by Pure Oil Co. Old Dutch Refining Co. pays 20 cents per barrel over Pure Oil Co.'s posted price. †Naph-Sal Refining Co. ‡Old Dutch Refining Co. §Posted by Stoll Refining Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland Ky., and delivered through own pipe line.

Mexico

Panuco*	$0.44

*F.o.b. ship, based on July transactions and exclusive of production and export taxes and bar dues.

Canada

Ontario (Nov. 3, 1931):	
Petrolia*	$1.90
Oil Springs*	1.97
Alberta (Apr. 22, 1932):	
Turner Valley†:	
Crude oil 40-44.9	1.54
Crude oil 45-45.9	2.13
Crude oil 50 and above	2.80
Crude naphtha	3.35
Discolored naphtha	3.05

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

NEWS FOR SALES DEPARTMENTS

"Zit" Trade Mark Is Refused on Appeal by Chemical Company

NEW YORK, Oct. 8.—First Assistant Patent Commissioner Kinnan has sustained an appeal by the Bonide Chemical Co. from the decision by an examiner of patent interferences denying the application of the company for registration of "Zit" as a trade-mark for a stock spraying preparation.

The decision was based on the ground that the trade-mark sought would be confused by the public with "Flit" and Stanco, Inc., subsidiary of the Standard Oil Co. of New Jersey, opposed the application.

Stanco, Inc., showed that it had been using the name "Flit" since May, 1923, continuously through its predecessor company and that it had made total sales since that date of approximately $8,000,000 of "Flit."

Gulf Refining Co. Lowest Bidder on Army Fuel Order

NEW YORK, Oct. 10.—Gulf Refining Co. has been awarded an order for 703,000 gallons of fuel oil, at 1.74 cents per gallon, for delivery to the U. S. Army Quartermaster at Philadelphia, Pa.

Boswell Oil Co. of Cincinnati has been awarded a contract for 125,000 gallons of fuel oil at 4.2 cents per gallon, 1 per cent, for delivery to U. S. Engineer at Cincinnati.

The Bureau of Supplies and Accounts, Navy Department, Washington, D. C., will open bids October 18 on schedule 3,759, for 3,000 pounds of petroleum residuum for delivery at various East and West Coast ports.

McColl-Frontenac to Build Great Lakes Storage Plant

CHATHAM, Ontario, Oct. 8.—McColl-Frontenac Oil Co., with refineries at Montreal and Toronto, will establish a distributing unit at Fort William, at the head of the lakes, providing storage for 2,500,000 gallons of gasoline and petroleum products. The company has purchased a 12-acre site on Island No. 1 with frontage on the McKellar River and will erect four steel frame storage tanks at an estimated cost of $85,000, to be completed about November 15. Gasoline and oil will be brought by water from the refining plants, the company now operating three tankers on the Great Lakes.

OPEN LARGEST STATION

On October 14 and 15 the Standard Oil Co. of New Jersey will formally open its new six-story limestone building in Washington, D. C. Located on the new Constitution Avenue (formerly B Street), close to the intersection with Pennsylvania Avenue. The building will house in addition to local offices probably the largest and most completely equipped service station in the world. The building was constructed according to plans approved by the Federal Finance Commission and represents an investment of somewhat more than $1,000,000.

BRITISH AMERICAN PLANT

CHATHAM, Ontario, Oct. 8.—British American Oil Co. of Toronto will erect an extensive distributing plant at Fort William, Ontario, tankers bringing petroleum products to the plant from the company's refineries at Toronto and Montreal.

Ontario Regulates Use of Benzol and Lead Compounds in Motor Gasoline

NEW YORK, Oct. 10.—The Ontario Department of Public Works and Labor has issued an exhaustive list of regulations covering the use of benzene, benzol, or lead and other substances by manufacturing industries in the province.

The new regulations follow:

1. Where lead or its compounds or benzol are prepared for use or used in any industrial process, special precautions must be taken.

2. Manufacturers and distributors of substances containing benzol as an ingredient for use in any industrial process must label in easily legible type with distinct visibility the packages or containers of this substance to show that benzol is present.

3. Manufacturers and distributors of substances containing lead or its compounds as ingredients for use in any industrial process must label in easily legible type with distinct visibility the packages or containers of these substances to show that lead or its compounds are present. (Exception is made where lead compounds are used only as driers in the preparation of paint products and where paint products are prepared for use by brush or by dipping process only.)

4. (a) Employers and others making importations of substances containing benzol or lead or its compounds for resale or for use in any industrial process must comply with Section 57 of the act and with these regulations.

(b) Manufacturers, distributors and employers using substances dangerous to health, when required by the chief inspector of factories on advice of the director of the Division of Industrial Hygiene, must post in a conspicuous place printed forms to be approved by the Department of Health setting forth these dangers and indicating the precautions necessary for the protection of their employes.

(c) Manufacturers, distributors and others offering for use in any industrial process substances which may contain ingredients harmful to health must provide accurate information regarding the percentage of these ingredients when requested by the chief inspector of factories or by the director of the Division of Industrial Hygiene, Provincial Department of Health.

(d) The chief inspector of factories on the advice of the director of the Division of Industrial Hygiene, Provincial Department of Health, may require at specified intervals, by qualified physicians at the expense of employers, physical examinations of workmen employed at the time of inspection or within the previous six months, in any industrial process, which is considered to be detrimental to health. The reports of these examinations shall be forwarded forthwith to the director of the Division of Industrial Hygiene, Provincial Department of Health, and shall meet their requirements.

(e) The fees for these physical examinations, if conducted in groups of five or more from one factory, shall not be in excess of $2 for each physical examination and report; $3 per film for X-ray examination and report; $2 each for blood count and report; $2 each for blood smear examination and report. Where less than five examinations are required by one factory at one time, these fees may be increased by not more than 50 cents each.

(f) All duly qualified physicians in the province shall report forthwith to the director of the Division of Industrial Hygiene, Provincial Department of Health, any case of specific industrial disease or of suspected specific industrial disease coming to their attention on report forms to be supplied by the Department of Health.

Reports Reveal Abuse of Tax Exemption Privilege

Gross abuses of the gasoline tax exemption privilege are recounted by the Kansas Farmer, which says that during June, 1931, farmers' exemptions were granted on 20 per cent of all the gasoline consumed, while in June, 1932, the exemptions amounted to 35 per cent. In Thomas County, Kansas, during June, 1932, gasoline tax collections amounted to $5,407.83. The exemption claim total was $10,756.08. June collections in Stanton County amounted to $3 642.42, while exemption claims totaled $8,626.92.

It is explained that little tractor work was done in either county during June, yet the figures indicate that each of the 565 farm tractors in Thomas County consumed 635 gallons of gasoline, while the 186 tractors in Stanton County each consumed 1,546 gallons. This makes no allowance for kerosene and distillates that farmers used for fuel.

The publication says that this misuse of refund privileges represents the work of the racketeer rather than of the farmer. The farmer's claim for exemptions on a small quantity of gasoline is said to be increased by thousands of gallons by adding cyphers to the gallonage figures.

"Where this crookedness has been uncovered," says the Kansas Farmer, "it has been found that it is the small oil jobber who runs a few filling stations along with his tank trucks who is guilty. The well known companies are not participating in this business. The State is putting some of the offenders in jail, but it is plain that the abuse of the law is out of bounds and that the fraud is increasing."

OIL MEN TO FORGET TROUBLES

NEW YORK, Oct. 10.—Depression, competition, price cutting and other headaches of the petroleum industry will be shelved when the Oil Trades Association of New York holds its annual banquet on the night of October 18 in the grand ballroom of the Hotel Waldorf-Astoria. Last year's banquet attracted a crowd of 700, and estimates indicate that this total may be exceeded this year. Next week's banquet, it is expected, will be attended by representative oil men from many points of the country, reservations from as far as Texas, having already been received. J. C. Smith, secretary of the association, and Bert Squires, veteran "arranger," have completed plans for an entertainment which is expected to set a new high, and Clifford T. Weihman, president, is looking after other details.

TEST NEW ASPHALT PRODUCT

CHATHAM, Ontario, Oct. 8.—Imperial Oil, Ltd., is paving 1¼ miles of beach road north of Sarnia, Ontario, for the purpose of testing an asphalt paving mixture manufactured under a new process at the Sarnia refinery.

Air Line to Buy 7 Million Gallons of Aviation Gasoline

A contract calling for delivery of approximately 7,000,000 gallons of gasoline, a year's requirement for United Air Lines, has been signed with the Standard Oil Companies of California and Indiana, it has been announced by P. G. Johnson, president of United Air Lines. The contract is for high grade aviation gas, with delivery to be at practically all of the 46 cities in 20 states served.

United Air Lines is now flying approximately at the rate of 14,000,000 miles a year with a fleet of 100 single-engined mail and multi-motored passenger planes.

The contract just signed by United and the Standard Oil Companies is said to be the largest commitment ever made by an air line for a year's supply of fuel. The company recently negotiated a contract for 275,000 gallons of Pennzoil for a year's operation on its airways.

This contract is interesting in view of the increasing consumption of petroleum products by the air transport lines. A report just issued by the Aeronautical Chamber of Commerce reveals these figures on air transport operations:

	First 7 mo. 1931	First 7 mo. 1932
Gasoline used, gal.	9,353,742	11,480,566
Oil used, gal.	271,391	339,263
Miles flown	22,455,878	28,009,666
Passenger miles flown	60,170,604	72,703,659

On the Chicago-San Francisco division multi-motored transport planes equipped with 525-horsepower Hornet engines are operated. These planes consume 97 gallons of gasoline per hour. Multi-motored transports equipped with 425-horsepower Wasp engines are operated on the Chicago-New York division of the cross-continent route and consume 75 gallons of gasoline per hour. On a 27-hour flight with United Air Lines from San Francisco to New York, a total of 2,425 gallons of fuel is burned and 350 quarts of oil are consumed.

Gasoline Tax Conference Names James Duce as Head

NEW YORK, Oct. 8.—James Duce, Colorado state oil inspector, was elected president of the North American Gasoline Tax Conference at the conclusion of its seventh annual meeting in Philadelphia last week.

A. P. Delahunt, Pennsylvania commissioner of liquid fuels tax, was elected vice president; E. D. Gordon, of Ohio, secretary, and J. C. Colton of Illinois, treasurer.

The 1933 meeting of the group will be held in Indianapolis, Ind.

CANADIAN GASOLINE IMPORTS

CHATHAM, Ontario, Oct. 8.—Official figures show that imports of gasoline into Canada in August amounted to 6,588,549 gallons valued at $873,289. Of this amount 6,586,820 gallons came from the United States, with 1,684 gallons from Rumania and 45 gallons from Newfoundland.

TAX COLLECTIONS HIGHER

Collection of Oklahoma gasoline taxes for the first month of the fiscal year showed a $206,937 increase over the corresponding period of last year, according to a report issued by the Oklahoma Tax Commission. This despite the reduction to 4 cents from 5 cents a gallon when the special unemployment relief tax was eliminated January 1, 1932.

NEWS FOR PETROLEUM REFINERS

High Compression Truck Motor Shows Favorable Results

Antiknock gasolines used in high compression truck engines save 3 mills a mile in fuel cost and reduce the number of valve grindings and bearing adjustments from seven to an average of one and one-half a year, it was shown by trucking tests reported to the Ethyl Gasoline Corp. The experiment disclosing these economies lasted one year and was carried out with bus and truck fleets operating in southern California.

Increasing the compression of truck engines operating in severe service eliminated boiling of the cooling water and permitted the trucks to operate at an average of one gear higher. Operating time for a 1,000-mile round trip was reduced six hours, and the work was found to be much easier on the drivers. Fuel consumption for the trip was reduced about 65 gallons.

Compression ratios in truck engines are now being increased by machining cylinder heads and by making other necessary adjustments for antiknock fuel at an average cost of $5 per engine, the report states. Truck manufacturers, the Ethyl Corporation predicts, will produce high compression engines to meet the demand for such equipment.

Expenditures on the $5 an engine scale would enable truck and bus operators to realize between 15 and 20 per cent power increase for each vehicle, it is estimated. This enhancement of power might be utilized to shorten the running time of a truck or bus or to pull a larger load. In the case of the bus, it would probably be desirable to reduce the running time by lessening the number of necessary gear shifts and stepping up the rate of acceleration.

The operation of any truck, bus or tractor engine that has fuel or carbon knocks when ordinary gasolines are used can be improved, it is stated, by the use of antiknock fuel.

Lincoln Oil Completes New Absorber and Stabilizer Unit

ROBINSON, Ill., Oct. 10.—The Lincoln Oil Refining Co. is completing the installation of an oil absorption plant and stabilizer at its local refinery. The unit replaces equipment which had been in operation for several years.

The new unit, which was installed by Black, Sivalls & Bryson, Tulsa, has a capacity to handle 3,500,000 feet of gas daily. The plant takes care of all plant gases including those obtained from a pressure distillation rerun operation.

Part of the dry gas from the stabilizing unit is delivered to a gas company serving the city of Lawrenceville. The refinery gas which has a B.t.u. content of 1,300 is blended and a gas of 800 B.t.u. is distributed in the city. The gas company now has over 1,000 connections.

NEW REFINERY IN WYOMING

CASPER, Wyo., Oct. 10.—Perry Jay of the Consumers Oil & Refining Co., Newcastle, Wyo., and Royal D. Saulsbury of the same place are putting completing touches on the new refinery in Clearmont, Wyo., on the Burlington railroad. The plant will have a charging capacity of about 150 bbls. The crude is to be supplied by Hugh Updike of Osage. The plant is designed to supply the market at Powder River, Buffalo, and parts of Sheridan and Johnson Counties.

July Consumption of Gasoline in U. S. Is 16 Per Cent Less Than Year Ago

The consumption of gasoline declined 16 per cent in the United States during July compared to a year ago, according to tax collections reported by the various states. These figures do not include motor fuel sold without tax as permitted by many states where it is to be used by farmers as a tractor fuel, etc. There is also considerable fuel consumed as motor fuel on which the tax is evaded. The compilation of tax returns of the various states showing the volume of gasoline taxed this July and a year ago appears below in accordance with a report of the American Petroleum Institute.

GASOLINE CONSUMPTION BY STATES, JULY, 1932

	Month of July, 1932 gallons	Month of July, 1931 gallons
Alabama	11,501,000	15,403,000
Arizona	5,222,000	6,536,000
Arkansas	9,389,000	13,209,000
California	104,174,000	110,692,000
Colorado	12,836,000	20,654,000
Connecticut	23,566,000	25,691,000
Delaware	4,572,000	3,929,000
Dist. of Columbia	9,178,000	8,581,000
Florida	15,023,000	19,769,000
Georgia	16,682,000	20,556,000
Idaho	5,026,000	6,392,000
Illinois	88,563,000	102,366,000
Indiana	49,414,000	49,414,000
Kansas	41,683,000	†42,943,000
Kentucky	15,025,000	17,253,000
Louisiana	12,996,000	16,664,000
Maine	12,869,000	14,936,000
Maryland	17,246,000	17,674,000
Massachusetts	54,571,000	59,988,000
Michigan	59,649,000	86,135,000
Minnesota	36,621,000	50,307,000
Mississippi	*8,780,000	11,329,000
Missouri	36,449,000	50,280,000
Montana	6,163,000	8,140,000
Nebraska	16,151,000	23,995,900
Nevada	2,110,000	2,537,000
New Hampshire	7,187,000	8,700,000
New Jersey	63,867,000	72,273,000
New Mexico	4,128,000	5,551,000
New York	152,775,000	169,277,000
North Carolina	20,424,000	22,376,000
North Dakota	8,999,000	13,247,000
Ohio	75,809,000	99,113,000
Oklahoma	22,870,000	30,904,000
Oregon	13,913,000	16,769,000
Pennsylvania	93,376,000	103,283,000
Rhode Island	9,485,000	10,435,000
South Carolina	8,815,000	10,911,000
South Dakota	10,256,000	15,418,000
Tennessee	15,403,000	18,377,000
Texas	66,447,000	80,127,000
Utah	4,751,000	7,384,000
Vermont	5,087,000	6,027,000
Virginia	19,983,000	23,690,000
Washington	20,577,000	27,277,000
West Virginia	11,407,000	14,950,000
Wisconsin	41,772,000	48,914,000
Wyoming	3,738,000	4,829,000
Total	1,356,538,000	1,615,215,000
Daily average	43,759,000	52,104,000
Change from previous year:		
Total decrease	258,677,000	
Percentage decrease	—16.0%	

*Estimated. †Revised.

Offer Recommendations for Investigating Exchangers

A definite procedure for the design, construction and testing of refinery exchanger equipment has been formulated by a committee of the American Society of Mechanical Engineers. The committee which investigated and compiled the data was composed of both refining and equipment engineers and represents the composite of the best ideas brought to its attention.

The recommendations which have been made are not mandatory but hope is expressed they will become the generally accepted means of making comparisons between two types of equipment and also will serve to bring all types nearer to a standardized form.

The personnel of the committee on tubular heat exchange equipment in refineries is composed of the following:

T. H. Hamilton, chairman; H. E. Bethon, secretary; E. H. Barlow, Standard Oil Development Co.; R. R. Collins, Lummus Co.; George Gibson, C. H. Leach Co.; A. C. Gronbeck, Southwestern Engineering Corp.; T. H. Hamilton, consulting engineer; M. B. Higgins, The Texas Company; D. S. Mallet, Tide Water Oil Co.; Walter Samans, Atlantic Refining Co.; E. N. Seider; Foster Wheeler Corp.; C. J. Wahl, M. W. Kellogg Corp.

The complete recommendations of the committee may be obtained by writing the American Society of Mechanical Engineers at 29 West Thirty-ninth Street, New York City.

INSURANCE FOR STATIONS

NEW YORK, Oct. 8.—One of the most essential investments, especially during the present period, is proper insurance protection, says Shell Eastern Petroleum Products, Inc., in a notice to its retail dealers. "Every service station operator or bulk distributor," says Shell, "should have his business properly covered, as a serious loss might very well mean bankruptcy. This means that he should have fire, workmen's compensation, public liability, and, if he operates automotive equipment, automobile liability and property damage insurance coverage.

Owners of Tanker Fleets Consider Pooling Vessels

NEW YORK, Oct. 11.—Major oil companies operating tanker fleets are considering a plan for the pooling of their vessels engaged in the intercoastal traffic and the movement of oil from South America to the United States in an effort to improve the tanker freight market, it is learned here.

Details of the proposed pooling are not available although it is considered likely that the tanker owners may form a freight conference, such as those operated by the principal owners of other than oil carrying vessels, the rate schedules and rules of operation of such a conference to be submitted to the U. S. Shipping Board for approval. Approval by the shipping board would permit the operation of such a pool, it is understood, without conflict with the antitrust laws.

LAKE HEADS SOCONY DIVISION

NEW YORK, Oct. 8.—Lieut. Col. Harley W. Lake has been appointed manager of the aviation division of the Socony-Vacuum Corp., and is establishing his headquarters at 26 Broadway here.

Colonel Lake will direct the operations of the merged aviation divisions of the Socony and Vacuum companies. Vacuum was a pioneer in the aviation industry, having supplied oil and gasoline to the Wright Brothers here and abroad during their early operations.

IMPERIAL OIL EXPANDS

The Imperial Oil Co., Ltd., is expected to develop an expansion program in the prairie provinces of Canada which will include expansion of the company's refining facilities near Halifax and increased storage facilities are being built at Fort Churchill. From here the products will be transported westward.

Third Cracking Unit Will Be Installed in Quaker State Plants

BRADFORD, Pa., Oct. 11.—Quaker State Oil Refining Corp., it was learned here, has completed negotiations with Universal Oil Products Co. of Chicago for the installation of a Dubbs cracking unit in the McKean County Refining Co. plant here. The unit is the third to be constructed in Quaker State refineries and it will follow closely in design the Dubbs units at the Emlenton Refining Co. and the Ohio Valley Refining Co. plants.

The McKean County unit, according to reports, will have a daily capacity of 1,250 bbls. when operated on gas oil and 1,500 bbls. on naphtha charging stock.

The Dubbs unit in the Emlenton plant commanded attention when it remained on stream continuously for more than two months. The unit made 65 to 72 per cent of 70 to 74 octane gasoline from Pennsylvania gas oil. The residual fuel was 8 gravity, 225 flash, 36 viscosity at 122°, and the pour test was —5.

The three new Quaker units are of the so-called flashing type.

Alco Obtains Further Rights in the Sale of Gyro Process

An arrangement which greatly increases the scope of its potential business has been made by Alco Products, Inc., division of American Locomotive Co., through an agreement with the Gyro Process Co. of Detroit, Mich., whereby Alco has acquired exclusive licensing, sales, engineering and manufacturing rights for the Gyro vapor phase cracking process for manufacturing antiknock gasoline. This arrangement becomes effective immediately throughout the world, with the exception of Canada.

The Gyro cracking process is the outgrowth of research that was undertaken as a result of experiences with high-compression airplane engines, and the difficulty of obtaining suitable fuels for such engines during the World War. It is known as a vapor phase process, as distinguished from the liquid phase process, and accomplishes the cracking without the use of extremely high pressures required by the latter. The Gypro cracked product, when mixed with straight gasoline, produces an antiknock motor fuel of exceptionally high power characteristics.

A by-product gas, containing compounds used in the manufacture of a variety of synthetic chemicals, is also obtained from the process.

BUILDING PIPE LINE

The Southern Oil & Refining Co. has let contract for 7 miles of 6-inch line from the town of Gladewater, Tex., south. It will be used as a gathering line.

NEW GLADEWATER PLANT

R. X. Cooke, formerly superintendent of the Humble Oil & Refining Co., is putting in a 1,000-bbl. refinery in the south part of Gladewater, western Gregg County, Texas.

BUILDING NEW REFINERY

The Locke Refining Co. is building a 1,500-bbl. refinery in the city of Gladewater, Tex., also laying a gathering system in that area to serve the plant.

H. H. KNOCH TRANSFERRED

PECOS, Tex., Oct. 8.—H. H. Knoch, former superintendent of the Burford Oil Co.'s local refinery, has been transferred to the company's plant at Longview.

NATURAL GASOLINE MANUFACTURE

Low for Gasoline Plant Operations Believed Passed

Practically every field in the United States has contributed to the improved statistical position in the natural gasoline market by holding down its production to as near current market demands as practicable. This trend is made apparent in the accompanying table showing the monthly production thus far this year and for comparison, similar figures are included for the first eight months of the past year.

It also appears that the "low" of natural gasoline demand has been reached for the year and to have been approximately 120,000,000 gallons a month. Thus, it appears, that there will be no need to curtail plant operations to a greater degree than at present and considering the favorable reduction in stocks during August it may be assumed for the time being at least that the minimum rate of operation has been passed.

The plants in all areas have curtailed in proportion to their capacity except that the flush fields, including Kettleman Hills and Oklahoma City in particular, have operated considerably below capacity. The effect of the new East Texas Field has been little felt, because it is not prolific as a producer of wet gas and plants have been added only when justified on the basis of conservation where there was a heavy concentration of producing wells.

In making a comparison of the curtailing of operations in the various fields since January, California stands out as the most important factor. Here the production has declined from 51,200,000 in January to 44,000,000 gallons in August. This is a drop of 7,200,000 gallons and represents a decrease of 14 per cent in the eight months.

The Appalachian fields show the largest percentage drop, the production from this area falling to about 50 per cent of the production in January. Oklahoma also showed a large percentage drop and ranks next to California in the drop in the quantity of gasoline produced. Oklahoma produced 36,000,000 gallons in January and in August production was allowed to decline to 28,700,000 gallons. This represents a drop of 20 per cent.

Kansas also showed a large percentage drop, the August output being but 64 per cent of the production in January.

Production in the United States in August as a whole was only 84 per cent of that in January.

Natural Gasoline Stocks September 1, Drop to Lowest Point This Year

Natural gasoline stocks were reduced to 25,880,000 gallons during August despite a slight increase in production. This reduction brought stocks to the lowest level so far this year. On September 1 stocks were nearly 5,000,000 gallons less than a year ago. Also, the decline from May 1 of this year, when a peak of 44,584,000 gallons was witnessed, has been more rapid than at any previous time. This has been brought about largely through the efforts of the industry to balance supply with current demands during the past summer months and now placed manufacturers in a more favorable position to take advantage of any upturn in the general refined oil price structure. It also places the natural gasoline manufacturers in a more favorable position to bring the market price of their products up more in line with refinery gasoline prices during the coming winter months.

The production of all grades of natural gasoline during August totaled 118,400,000 gallons which compares with 118,100,000 gallons produced in July. This marks the first increase in production since March. The largest gains have been registered in the Panhandle and Kettleman Hills fields. However, the increase is comparatively small in each case.

The production of the plants in the Panhandle area has shown a rather slow consistent upward trend over the past 10 years. During August production there is reported by the Bureau of Mines as 14,000,000 gallons. In July this area produced 13,600,000 gallons. In the Kettleman Hills area the August output is reported as 10,700,000 gallons which compares with 10,200,000 gallons for that area in July.

The plants in these fields together with those of the Oklahoma City Field, have had their production held down by the curtailment of the production of crude as the result of proration. So, while some concern may be shown regarding small increases in the production of these fields from time to time, there is no question but that operations in these fields are being held down to as near market demands as in any other area. Further than this, these flush fields have had to withstand the bulk of the curtailment program over the past three years, these areas having to stand the difference in demand after operations were adjusted downward, but to a lesser degree, in the more settled areas.

NATURAL GASOLINE STATISTICS FOR AUGUST
(Thousands of gallons)

	Natural gasoline: Production Aug., 1932	July, 1932	Aug., 1931	Jan.-Aug., 1932	Stocks end of month: Aug., 1932	July, 1932	Blended motor fuel Aug., 1932: Natural gasoline used	Naphtha or other oils used	Stocks end of month
Appalachian	3,800	3,500	4,000	44,400	2,335	4,028	40	61	99
Ill., Ky., Ind.	500	600	700	5,100	152	290	..	..	..
Oklahoma	28,700	29,800	27,000	257,900	11,898	14,074	33	61	37
Oklahoma City	5,500	5,400	1,500	52,200	2,101	2,542	..	..	..
Osage County	3,600	3,900	4,300	31,700	1,149	2,194	1	1	3
Seminole	8,600	8,800	11,600	78,300	5,426	5,567	1	..	..
Rest of State	11,000	11,700	9,600	95,700	3,222	3,771	31	60	34
Kansas	1,600	1,600	2,500	16,600	996	786	31	8	40
Texas	29,300	28,600	34,200	236,900	7,079	8,200	33	4	5
Panhandle	14,000	13,600	17,600	115,300	3,485	3,322	1	1	..
North Texas	1,900	2,100	2,100	17,100	703	798	4	..	2
West Central	6,800	6,800	8,600	58,100	2,028	3,074	28	3	3
Rest of State	6,600	6,100	5,900	46,400	863	1,006	..	..	..
Louisiana	3,700	3,600	3,400	32,900	576	779	..	..	..
Arkansas	1,600	1,700	2,000	13,700	242	308	..	..	4
Rocky Mountain	5,200	5,200	6,100	40,500	366	675	20	4	9
California	44,000	43,500	55,500	373,100	2,244	2,669	..	..	..
Huntington Beach	1,400	1,400	1,700	11,700	....	....	..	..	..
Kettleman Hills	10,700	10,200	14,400	91,100	....	....	..	..	..
Long Beach	8,500	8,500	10,600	73,000	....	....	..	..	..
Santa Fe Springs	8,100	8,200	9,800	68,300	....	....	..	..	..
Ventura Avenue	2,900	2,800	4,400	26,600	....	....	..	..	..
Rest of State	12,400	12,400	14,600	102,400	....	....	..	..	..
Total	118,400	118,100	135,400	1,021,100	25,888	31,809	157	138	194
Daily average	3,820	3,810	4,370	4,185	....	....	..	..	..
Total (thousands of bbls.)	2,819	2,812	3,224	24,312	616	757	4	3	5
Daily average	91	91	104	100	....	....	..	..	..

The effect of the East Texas Field is being indirectly reflected in the Texas production in the entry shown as "Rest of State." Because there is a comparatively small production as yet from this area, it has not been given a separate heading but is grouped with the more settled areas. At present there are in excess of 8,500 producing wells in the East Texas area and although the production of both gas and crude is being held down, there is an increasing volume of gas going to the natural gasoline plants. Plant operation has had sufficient time to make adjustments by this time and there is a sufficient continuity of gas supply to permit an increasing production in these plants. Although the total output of wet gas from this field has never been expected to make the East Texas area a major source of natural gasoline, it will continue to be felt as a factor in the Mid-Continent market.

For convenience in tracing the trend in natural gasoline stocks at the plants during 1931 and thus far this year, the following table has been prepared. The greatly improved position of the stocks on September 1 is made apparent.

STOCKS OF NATURAL GASOLINE AT PLANTS AT THE CLOSE OF EACH MONTH EXPRESSED IN GALLONS

1931	
January	25,500,000
February	29,100,000
March	37,100,000
April	42,300,000
May	41,800,000
June	36,100,000
July	35,900,000
August	30,300,000
September	25,800,000
October	22,000,000
November	26,900,000
December	27,100,000
1932	
January	34,000,000
February	36,800,000
March	39,778,000
April	44,584,000
May	44,279,000
June	34,106,000
July	31,809,000

A slight gain in the production is also shown for the Oklahoma City Field but this falls short of the decline registered in the rest of the fields in Oklahoma. The declines in the Seminole and Osage Fields of Oklahoma reflect the natural falling off in the gas supply and this trend is also forcefully shown in the declining production in the composite of the minor fields listed as "Rest of State."

TREND OF PRODUCTION OF NATURAL GASOLINE IN THE UNITED STATES BY DISTRICTS DURING FIRST SEVEN MONTHS OF 1932 AND 1931
(Millions of gallons)

	1932 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	1931 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	First 8 mo. 1932	1931	Decrease
Appalachian	7.4	7.2	7.8	6.2	4.8	3.7	3.5	3.8	8.9	7.6	8.4	6.8	5.9	4.2	3.7	4.0	44.4	49.6	5.2
Kentucky, Illinois and Indiana	.6	.6	.8	.7	.6	.7	.6	.5	1.2	1.0	1.1	.8	.8	.6	.7	.6	5.1	6.4	1.3
Oklahoma	36.0	33.6	33.2	33.3	33.4	29.9	29.8	28.7	44.1	39.8	44.6	42.6	43.7	38.8	39.4	26.1	257.9	312.2	54.3
Oklahoma City	7.7	6.5	6.9	7.2	7.1	5.9	5.4	5.5	3.8	3.5	4.7	4.9	5.9	5.6	5.3	1.2	52.2	32.5	*19.7
Osage County	4.5	4.0	4.1	3.9	4.0	3.7	3.9	3.6	7.7	5.7	6.2	5.9	5.8	5.3	5.3	4.6	31.7	43.7	12.0
Seminole	10.8	10.4	10.0	10.7	10.1	8.9	8.8	8.6	18.6	17.6	19.6	18.9	18.4	16.5	16.9	9.3	78.3	119.7	41.4
Rest of State	13.0	12.7	12.2	11.5	12.2	11.4	11.7	11.0	14.0	13.0	14.1	12.9	13.6	11.4	11.9	11.6	95.7	116.2	20.6
Kansas	2.6	2.4	2.3	2.2	2.2	1.7	1.6	1.6	2.9	2.8	3.2	3.0	2.7	2.4	2.5	2.3	16.6	20.2	3.6
Texas	31.0	30.1	30.4	29.9	29.7	27.9	28.6	29.3	40.8	36.7	39.4	37.2	35.7	34.3	34.0	34.2	236.9	292.3	55.4
Panhandle	15.6	14.9	15.2	14.4	12.2	13.4	13.6	14.0	20.0	17.8	18.6	17.8	17.4	16.9	17.0	17.4	115.3	141.1	25.7
North Texas	2.2	2.2	2.2	2.1	2.4	2.0	2.1	1.9	3.5	3.1	3.3	3.0	2.6	2.5	2.4	2.5	17.1	25.5	8.4
West Central	8.1	7.6	7.7	7.6	7.2	6.3	6.8	6.8	11.1	9.8	10.7	10.3	10.0	8.9	8.9	9.3	58.1	84.4	26.3
Rest of State	5.1	5.4	5.3	5.8	5.9	6.2	6.1	6.6	6.2	6.0	6.8	6.1	5.7	6.0	5.7	5.0	46.4	41.3	5.1
Louisiana	4.7	4.4	4.4	4.3	4.0	3.8	3.6	3.7	5.7	5.7	5.8	5.5	4.9	4.7	4.3	3.7	32.9	35.1	2.2
Arkansas	1.7	1.7	1.7	1.8	1.8	1.7	1.7	1.6	2.5	2.4	2.5	2.5	2.4	2.3	2.2	2.0	13.7	19.2	5.5
Rocky Mountain	5.2	4.7	4.9	5.0	5.1	5.2	5.2	5.2	5.7	4.9	5.3	5.5	6.1	6.0	5.9	5.8	40.5	44.9	4.4
California	51.2	47.5	48.8	46.9	47.7	43.5	43.5	44.0	64.9	54.4	62.5	59.4	60.7	57.2	57.3	54.8	373.1	466.6	93.5
Long Beach	9.7	8.9	9.8	9.4	9.5	8.7	8.5	8.5	13.8	12.4	13.5	11.9	11.8	11.1	10.9	10.5	73.0	95.1	22.1
Ventura Avenue	4.4	4.2	3.6	3.0	3.1	2.6	2.8	2.9	4.9	4.4	5.2	4.9	4.8	4.5	4.4	4.3	26.6	36.9	10.3
Huntington Beach	1.4	1.4	1.5	1.5	1.7	1.4	1.4	1.4	2.0	1.8	2.0	1.9	1.9	1.7	1.7	1.7	11.7	14.6	3.1
Kettleman Hills	13.5	12.4	11.8	10.9	11.3	10.3	10.2	10.7	16.5	11.9	14.8	15.0	15.6	15.7	15.9	14.2	91.1	118.5	27.4
Santa Fe Springs	9.4	8.5	8.6	8.7	8.7	8.1	8.2	8.1	12.2	10.0	11.3	10.9	11.3	9.9	10.0	9.7	68.3	84.6	16.3
Rest of State	12.8	12.1	13.5	13.4	13.4	12.4	12.4	12.4	15.5	13.9	15.7	14.8	15.3	14.3	14.4	14.4	102.4	116.9	14.5
Total United States	140.4	132.2	134.3	130.3	129.3	118.1	118.1	118.4	176.7	155.3	172.8	163.3	162.9	150.5	149.9	133.5	1,021.1	1,246.9	225.8
Daily average	4.5	4.6	4.3	4.3	4.2	3.9	3.8	3.8	5.7	5.5	5.6	5.4	5.3	5.0	4.8	4.3	4.1	5.1	1.0
Stocks at end of period	40.0	36.8	39.8	44.6	44.3	34.1	31.8	25.9	25.5	29.1	37.1	42.3	41.8	36.1	35.9	30.3	25.9	30.3	4.4

*Increase.

Many Types of Materials Available for Manufacturers

(Continued from Page 13)

doubtedly make good plungers, but it is doubtful if the results obtained justify the cost over some of the less expensive materials unless, of course, the particular conditions of corrosion demand their use.

Many satisfactory plungers have been made by casting a fine-grained cast iron around a central supporting steel tube. The cast iron provides the desirable glaze-forming surface while the steel tube provides the necessary strength. Such plungers, if carefully made, are comparatively inexpensive and their performance under conditions ordinarily considered corrosive have been most satisfactory. For general performance, their use is to be recommended.

Valves

The problems involved in the design of valves for either pumps or compressors are closely allied. In either case the valves must not leak, they must provide large free area in order to offer the minimum resistance to the flow of the gas or liquid passing through, and the unbalanced area between the valve and seat must be small. They must be strong, simple in construction and capable of running for long periods of time without impairment to their efficiency or the necessity for renewals. In the case of gases, or liquids which may readily gasify, the valves must be quite compact in order that the volumetric clearances in the cylinders may be kept to a minimum.

The material most likely to meet these requirements must be strong, stiff, capable of being hardened and resistant to the corrosive attack of the medium to be handled. The first three requirements can be adequately met by one of the low alloy steels, but the latter necessitates the use of one of the noncorrosive types such as stainless iron.

Under some conditions of corrosion, however, bronze is essential for a reasonable length of life and hence must be used. Bronzes of high tensile strength are available, such as the aluminum bronzes, but, unfortunately, their modulus of elasticity is invariably only about one-half that of steel and hence, in order to avoid deflection with its attendant leakage, heavier sections must be used. Heavier sections usually mean reduced free area. Further, the bronzes cannot be hardened to the extent that the steel can, so that their resistance to indentation and roughening of the seat from dirt is comparatively small.

Of the stainless materials available, the 18 chromium and 8 nickel, and stainless irons with 12 to 15 per cent chromium, are the two which probably have the widest range of satisfactory application. The 18 and 8 material is of the austenitic type and does not respond to heat treatment. It can be hardened somewhat, however, through cold work. Its resistance to corrosion, as encountered in the oil industry, however, is quite good and this may compensate to some extent for its lack of hardness in a valve service. Its high coefficient of expansion is somewhat of a detriment when being used in seats at the higher temperatures.

The stainless irons can be heat treated to develop considerable hardness without impairment either to their physical characteristics or their resistance to corrosion. Valves with a Brinell hardness of 325 and seats with a hardness of 225 are well removed from the sensitive corrosion range and they work well together without pitting or erosive cutting. The unmachined surfaces must be free of scale or other foreign matter if the maximum resistance to corrosion is to be obtained.

Springs may be made of a .25 carbon 12/14 chromium steel, coiled and then fully heat treated, or they may be made from a suitably processed line of the 18 chromium and 8 nickel type of material. In the latter case the physicals are developed through cold work and hence are not as stable under temperatures as those developed through heat treatment. When suitably stressed, the stainless iron springs may be operated at temperatures up to 750° F. whereas 500° F. seems to be a top limit for the chrome-nickel type. Careful design and control in all stages of manufacture are essential to good performance in stainless steel springs.

Centrifugal Pumps

While the paper has dealt largely with the material requirements of the reciprocating units, the same general principles apply to the centrifugal pumps. One of the chief differences, in so far as materials are concerned, is the fact that the centrifugal shaft revolves at a comparatively high speed and hence the bearing and packing problems are somewhat different to those of the rod. In the reciprocating unit the working portion of the rod or plunger is exposed to view and any tendency for excessive wear or scoring becomes apparent and may be corrected before serious damage occurs. In the centrifugal pump, the working surfaces are concealed and hence scoring may start and develop appreciably before being detected. For this reason, greater care must be exercised in procuring suitable hard, wear-resisting materials. Although shafts are normally made of one of the low alloy steels or stainless iron some severe conditions may justify the use of a nitralloy or stellite sleeves where the piece contacts with the packing.

Gas Engines for Use in Refineries

Gas engines, particularly of the horizontal double-acting type, are well adapted for operating hot oil pumps or compressing gas in the oil refineries. The tail gas, usually ranging from 1,600 to 2,000 B.t.u. per cubic foot is a cheap, desirable form of fuel from which high economies can be obtained.

Refinery gases are usually contaminated with varying percentages of hydrogen sulphide and this, if not removed, has a most deleterious effect on all the working parts with which it contacts. Fortunately, the removal of this objectionable constituent can be readily accomplished, and at small cost, through the use of caustic scrubbers. With the hydrogen sulphide reduced to a maximum of 10 to 15 grains per 100 cubic feet, the corrosion problem is automatically eliminated and the standard material of construction may be used throughout.

Record for Fast Drilling Claimed for Well in Conroe

HOUSTON, Tex., Oct. 10.—Records for fast drilling which were set during the hurried drilling of East Texas are believed to have been placed in the background by the speed made by Humble Oil & Refining Co. in putting down its No. 12 South Texas Development Co. in the Conroe Field, Montgomery County.

That well was spudded in on Thursday, September 29, and on Sunday, October 9, the hole stood with 7-inch casing cemented on top the sand at 5,065 feet with the bottom of the hole another 15 feet below that. A total of only 11 days was required for the drilling and cementing of casing. A surface string was cemented between 1,000 and 1,100 feet.

The well conforms to regulations of the Railroad Commission pertaining to hole deviations which require that no hole on a tract of 20 acres or more shall be more than 5 degrees off vertical.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective June 26, 1932)

For current purchases of crude oil at the well (unless otherwise specified.) (All gravities above those quoted take highest price offered in that field.)

Gravity—	Signal Hill (Long Beach)	Seal Beach, Alamitos Heights, Huntington Beach	Inglewood	Playa Del Rey	Olinda-Brea Canyon	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Athens, Rosecrans, Domingues	Montebello	Wheeler Ridge	Coalinga	Whittier-LaHabra
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	$.65	$.65	....	$.55	$.55	....	$.65	$.55	$.55	$.65
15-15.9	.65	.65	.65	.65	.65	.65	.65	.65	....	.55	.55	....	.65	.55	.55	.65
16-16.9	.65	.65	.65	.65	.65	.65	.65	.65	....	.55	.55	....	.65	.55	.55	.65
17-17.9	.65	.65	.65	.65	.65	.65	.65	.65	....	.55	.55	....	.65	.55	.55	.65
18-18.9	.65	.65	.65	.65	.65	.65	.65	.65	....	.55	.55	....	.65	.55	.55	.65
19-19.9	.65	.65	.65	.65	.65	.65	.65	.65	....	.55	.55	....	.65	.55	.55	.65
20-20.9	.69	.69	.71	.69	.69	.69	.69	.65	....	.59	.59	....	.65	.57	.59	.68
21-21.9	.74	.74	.77	.74	.74	.74	.74	.66	....	.63	.63	....	.67	.60	.62	.72
22-22.9	.79	.79	.82	.78	.79	.79	.79	.70	....	.69	.69	....	.70	.62	.65	.77
23-23.9	.84	.84	.88	.82	.84	.84	.84	.76	....	.75	.75	....	.73	.66	.68	.83
24-24.9	.89	.89	.92	.86	.89	.89	.89	.81	$.73	.81	.81	$.89	.76	.69	.72	.89
25-25.9	.93	.93	....	.91	.93	.93	.93	.86	.79	.87	.87	.93	.80	.72	.75	....
26-26.9	.97	.97	....	.96	.97	....	....	.90	.84	.92	.91	.97	....	....	....	....
27-27.9	1.00	....	....	....	1.00	....	....	.94	.89	.97	.94	1.00	....	....	....	....
28-28.9	1.03	....	....	....	1.03	....	....	.98	.94	1.02	.99	1.03	....	....	....	....
29-29.9	1.06	....	....	....	....	....	....	1.02	.98	1.07	1.02	1.06	....	....	....	....
30-30.9	1.09	....	....	....	....	....	....	1.05	1.02	1.12	1.05	1.09	....	....	....	....
31-31.9	....	....	....	....	....	....	....	....	1.06	....	....	1.12	....	....	....	....
32-32.9	....	....	....	....	....	....	....	....	1.10	....	....	1.15	....	....	....	....
33-33.9	....	....	....	....	....	....	....	....	1.14	....	....	....	....	....	....	....
34-34.9	....	....	....	....	....	....	....	....	1.18	....	....	....	....	....	....	....
35-35.9	....	....	....	....	....	....	....	....	1.22	....	....	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

The Texas Company, effective June 26, posted same prices as the Standard Oil Co. in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield, Montebello, North Whittier and Santa Fe Springs.

The Union Oil Co., effective June 26, posted the same price as the Standard Oil Co. in the Signal Hill, Alamitos Heights, Seal Beach, Huntington Beach, Athens, Rosecrans, Dominguez, Torrance Santa Fe Springs, Playa Del Rey, Coyote, Olinda, Brea Canyon, Richfield and Montebello. In Coalinga, Lost Hills, Kern River, McKittrick, Midway-Sunset, Elk Hills and Buena Vista Hills the Union Oil Co. met the Standard Oil Co.'s prices from 14 gravity upward, but posted a price of 50 cents for oil 11 to 13.9 degrees in gravity.

General Petroleum adopted Standard Oil Co.'s prices, effective June 26, in Rosecrans, Signal Hill, Alamitos Heights, Santa Fe Springs, Inglewood, Torrance, Brea Canyon and Olinda, up to 25.9 degrees; Richfield, Midway-Sunset, Kern River, Mount Poso, Round Mountain, and Coalinga and posted in Rincon as follows: 22-22.9 degrees, 68 cents; 23-23.9 degrees, 73 cents; 24-24.9 degrees, 78 cents; 25-25.9 degrees, 82 cents; 26-26.9 degrees, 86 cents; 27-27.9 degrees, 89 cents; 28-28.9 degrees, 92 cents; 29-29.9 degrees, 95 cents; 30 degrees and over, 98 cents. In Rosecrans, General Petroleum Co. pays 65 cents for 14 to 19.9 gravity oil; 20-20.9 degrees, 69 cents; 21-21.9 degrees, 74 cents; 22-22.9 degrees, 79 cents; 23-23.9 degrees, 85 cents, and Standard's prices for oil of higher gravity.

Associated Oil Co., effective June 26, met Standard Oil Co.'s prices in Signal Hill, Huntington Beach, Seal Beach, Alamitos Heights, Richfield, Torrance, Inglewood, Athens, Rosecrans, Dominguez, Santa Fe Springs, McKittrick, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, Lost Hills, Belridge and Coalinga.

Kettleman Hills—The Union Oil Co., effective June 26, posted 33-33.9 gravity oil at 91 cents; 34-34.9 degrees, 93 cents; 35-35.9 degrees, 95 cents; 36-36.9 degrees, 97 cents; 37-37.9 degrees, 99 cents; 38-38.9 degrees, $1.01; 39 degrees and over, $1.03. Standard Oil Co., Associated Oil Co. and General Petroleum Co. adopted same price schedule on same day.

Santa Paula—The Union Oil Co. and The Texas Company, effective June 26, posted as follows: 14 degrees to 19-19.9 degrees, 66 cents; 20-20.9 degrees, 69 cents; 21-21.9 degrees, 72 cents; 22-22.9 degrees, 75 cents; 23-23.9 degrees, 78 cents; 24-24.9 degrees, 81 cents; 25-25.9 degrees, 84 cents; 26-26.9 degrees, 87 cents; 27-27.9 degrees, 90 cents; 28-28.9 degrees, 93 cents; 29 degrees and above, 99 cents.

Shields Canyon and South Mountain—The Texas Company, effective June 26, posted same prices as in Santa Paula.

Orcutt—The Union Oil Co., effective June 26, posted prices as follows: 16 degrees to 19.9 degrees, 55 cents; 20-20.9 degrees, 59 cents; 21-21.9 degrees, 63 cents; 22-22.9 degrees, 69 cents; 23-23.9 degrees, 75 cents; 24-24.9 degrees, 81 cents; 25-25.9 degrees, 87 cents; 26 degrees and above, 92 cents.

Playa Del Rey—Subject to a field gathering charge of 5 cents per barrel.

Newhall, McKittrick and Kern River—Standard Oil Co., effective June 23, 1931, posted 55 cents for oil of all grades.

Elwood Terrace—Standard Oil Co., effective June 26, 1932, posts 33-33.9 degrees, $1.04; 34-34.9 degrees, $1.10; 35-35.9 degrees, $1.16; 36-36.9 degrees, $1.22; 37-37.9 degrees, $1.28. All prices f.o.b. ships.

Ventura Avenue—General Petroleum Co. and Associated Oil Co. effective June 26 posted as follows: 22-22.9 degrees, 72 cents; 23-23.9 degrees, 77 cents; 24-24.9 degrees, 82 cents; 25-25.9 degrees, 86 cents; 26-26.9 degrees, 90 cents; 27-27.9 degrees, 93 cents; 28-28.9 degrees, 96 cents; 29-29.9 degrees, 99 cents; 30 degrees and over, $1.02.

Potrero—Associated Oil Co., effective June 26, posted same prices as are paid by all companies in Athens, Rosecrans and Domingues

SOVIET-JAPAN OIL CONTRACT

Kojiro Matsukata's contract with the Soviet Union provides, according to the latest accounts from Moscow, for the exportation to Japan of approximately 700,000 bbls. of oil in the first year. The chief of the Soviet oil export department and Mr. Matsukata have both issued statements declaring the contract is a forerunner of more extensive economic relations. Tokyo traders nevertheless remain skeptical regarding the practical effect of the contract since the sale of gasoline in Tokyo is in the hands of six Japanese and foreign companies, whose systems of distribution are highly organized.

NEW BOOK ABOUT ROCKEFELLER

A complete and interesting history of the petroleum industry from the days of its infancy, with particular reference to the part played by John D. Rockefeller in developing the business, is featured by "God's Go'd; Rockefeller and His Times," by John T. Flynn, noted economist and writer, published by Harcourt Brace & Co. of New York. Although dealing primarily with the elder Rockefelltr and his operations in oil, the book deals with the more historical aspects and figures of the industry, and stresses the ill effects of the overproduction which, with few exceptions, has beset the industry since its inception.

TANK WAGON CHANGES

(Continued from Page 26)

tober 6 reduced the tank truck price of gasoline in Portland, Ore., from 21 cents to 20 cents, and the posted retail price from 20 cents to 19 cents.

Standard Oil Co. of New Jersey on October 4 reduced the station price of gasoline in Wheeling, W. Va., from 16.7 cents to 15.7 cents.

Mid-Continent Refiners Curtailing Operations in October

(Continued from Page 8)

REFINERY OPERATIONS IN OKLAHOMA
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs October	Runs Sept.
Altitude Petroleum Corp., Oklahoma City	3,000	600	700
Associated Petroleum Corp., Allen	3,000	(*)	(*)
Anderson-Prichard Oil Corp., Cyril	5,000	3,600	3,900
Barnsdall Refineries, Inc., Barnsdall	6,000	3,000	3,200
Barnsdall Refineries, Inc., Okmulgee	10,000	(*)	3,500
Bell Oil & Gas Co., Grandfield	4,500	2,100	2,000
Black Gold Refining Co., Oklahoma City	1,500	600	700
Capital City Refining Co., Oklahoma City	2,500	(*)	150
Century Petroleum Co., Tulsa	500	(*)	(*)
Century Petroleum Co., Oklahoma City	2,500	500	700
Champlin Refining Co., Enid	16,000	7,000	7,000
Continental Oil Co., Sapulpa	10,000	1,000	1,200
Continental Oil Co., Ponca City	30,000	9,000	9,700
Cushing Refining & Gasoline Co., Blackwell	1,800	1,500	1,500
Cushing Refining & Gasoline Co., Cushing	3,500	3,050	2,500
Deep Rock Oil Corp., Cushing	10,000	10,000	10,000
Eason Oil Co., Enid	5,000	3,000	3,000
Empire Oil & Refining Co., Okmulgee	4,000	2,500	2,700
Empire Oil & Refining Co., Ponca City	12,000	6,800	8,000
Garber Refineries, Inc., and Omar Refining Co., Garber	3,500	2,000	2,200
Globe Oil & Refining Co., Blackwell	7,500	6,500	6,500
Gulf States Oil Corp., Oklahoma City	3,500	(*)	700
Johnson Oil Refining Co., Cleveland	5,000	4,000	4,000
Major Oil Co., Oklahoma City	2,000	200	200
Mid-Continent Petroleum Corp., West Tulsa	40,000	18,000	17,000
Marathon Oil Co., Boynton	2,500	(*)	1,500
Marathon Oil Co., Bristow	5,000	(*)	(*)
Phillips Petroleum Co., Okmulgee	5,000	3,500	3,500
Producers Oil Co., Bristow	2,500	1,000	1,000
Producers & Refiners Corp., West Tulsa	6,000	2,500	2,600
Pure Oil Co., Ardmore	5,000	1,200	2,700
Pure Oil Co., Muskogee	9,000	7,000	7,000
Rock Island Refining Co., Beckett	5,000	3,600	4,600
Sinclair Refining Co., Sand Springs	8,000	2,300	2,300
Speedway Gasoline Refining Co., Oklahoma City	400	200	200
Sterling Refining Co., Oklahoma City	2,000	600	700
Sun Oil Co., Yale	5,000	3,500	3,000
Sunray Oil Co. (C. E. Wright, receiver), Allen	7,000	2,000	4,000
The Texas Company, West Tulsa	15,000	8,000	9,000
Texas Pacific Coal & Oil Co., Wynnewood	3,000	1,500	1,500
Tidal Refining Co., Drumright	15,000	7,000	8,000
Western Oil Corp., Beckett	2,000	450	(*)
Wilcox Oil & Gas Co., Bristow	5,000	1,000	2,500
Wirt Franklin Petroleum Corp., Ardmore	4,000	2,650	2,000
Yale Oil Corp., Yale	2,000	600	500
York Refining Co., Oklahoma City	3,000	200	200
Total	309,700	133,200	147,850

*Shut down.

REFINERY OPERATIONS IN NORTH CENTRAL TEXAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs October	Runs Sept.
Allstate Refining Co., Thrall	3,000	500	500
American Refining Properties, Wichita Falls	6,000	(*)	(*)
Archer Refining Co., Megargel	1,500	350	300
Atlantic, Pacific and Gulf Refining Co., Wichita Falls	5,000	500	500
Bobrose Oil & Refineries, Brownwood	2,000	(*)	(*)
Continental Oil Co., Wichita Falls	6,000	3,000	2,500
Dale Oil & Refining Co., Electra	4,000	(*)	(*)
Dixon Creek Oil & Refining Co., Kings Mill	3,500	850	1,000
Empire Oil & Refining Co., Gainesville	5,000	2,500	2,700
Falls Refining Co., Wichita Falls	2,000	550	350
Gratex Refining Co., Graham	500	150	130
Gulf Refining Co., Fort Worth	10,000	6,000	5,000
Humble Oil & Refining Co., Breckenridge	2,000	(*)	(*)
Humble Oil & Refining Co., Chilton	4,000	(*)	(*)
Humble Oil & Refining Co., Neches	5,000	2,600	1,700
Iowa Park Producing & Refining Co., Iowa Park	2,500	(*)	(*)
Kent Refining Co., Minerva	2,000	300	300
Kent Refining Co., Angus	4,000	(*)	(*)
LaSalle Petroleum Co., Burkburnett	3,500	300	200
Macmillan Petroleum Co., Isom	8,000	(*)	(*)
Magnolia Petroleum Co., Fort Worth, No. 1	12,000	5,300	4,000
Magnolia Petroleum Co., Fort Worth, No. 2	6,000	300	2,500
Magnolia Petroleum Co., Corsicana	5,000	4,300	4,000
Marathon Oil Co., Fort Worth	5,000	3,500	3,500
Moon Refining Co., Graham	300	50	100
Muenster Refining Co., Muenster	300	(*)	(*)
Olney Oil & Refining Co., Olney	2,500	1,500	2,000
Oriental Oil Co., Dallas	5,000	1,000	1,500
Panhandle Refining Co., Wichita Falls	5,000	2,000	2,300
Petroleum Refractionating Co., Pampa	6,500	5,500	5,000
Phillips Petroleum Co., Isom	18,000	16,500	17,500
Phoenix Refining Co., Inc., Dallas	3,000	600	600
Pilot Point Refining Co., Pilot Point	500	300	300
Primrose Refining Co., Wichita Falls	2,500	(*)	(*)
Shamrock Oil Co., Sunray	4,000	600	(*)
Sinclair Refining Co., Fort Worth	5,000	2,500	2,500
Simms Oil Co., West Dallas	4,500	3,000	3,000
Southland Refining Co., Olney	1,000	100	150
Star Refining & Producing Co., Fort Worth	1,500	500	700
Taylor Refining Co., Taylor	6,000	1,500	1,500
Taxman Refining Co., Wichita Falls	3,000	2,500	3,000
The Texas Company, Dallas	16,000	13,000	14,000
The Texas Company, Amarillo	4,000	2,500	2,800
Texas Pacific Coal & Oil Co., Fort Worth	3,000	2,000	2,800
Texas Pacific Coal & Oil Co., Caddo	1,000	600	600
Waggoner Refining Co., Electra	3,400	2,500	4,500
Wilcox Oil & Gas Co. (Pampa Refining Co.), Pampa	4,000	(*)	(*)
Young Refining Co., Archer City	250	(*)	(*)
Total	209,800	89,750	97,030

*Shut down.

REFINERY OPERATIONS IN EAST TEXAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs October	Runs Sept.
Alamo Refining Co., Camps Switch	2,500	400	(*)
Arrow Refining Co., Overton	2,500	850	800
Beacon Oil & Refining Co., Henderson	2,500	1,700	1,500
Boone Refining Co., Arp	500	1,000	1,200
Constantin Refining Co., Overton	3,000	(*)	(*)
Diamond Refining Co., Overton	3,000	800	800
East Texas Refining Co., Henderson	6,000	(*)	(*)
East Texas Refining Co., Longview	10,000	(*)	7,500
Gladetex Refining Co., Gladewater	500	300	300
Gladewater Refining Co., Gladewater	500	(*)	400
Guillory Refining Co., Kilgore	200	60	100
H.&M. Refinery Co., Gladewater	200	125	100
Johnsonville Refining Co., Omega	200	60	(*)
Kilgore Refining Co., Kilgore	1,500	700	750
Overton Refining Co., Overton	3,500	1,500	1,500
Petroleum Refractionating Co., Longview	10,000	(*)	(*)
Sinclair Refining Co., Camps Switch	5,000	1,900	1,500
Southern Oil Refining Co., Kilgore	2,500	1,000	1,000
Taylor Refining Co., Tyler	15,000	10,000	3,800
V.C.E. Refining Co., Gladewater	500	600	600
Total	79,200	20,995	21,950

*Shut down.

REFINERY OPERATIONS IN ARKANSAS
(Plants which have been in operation during the past year)

Company and location—	Daily capacity	Runs October	Runs Sept.
Berry Asphalt Co., Waterloo	2,000	1,000	1,000
Henry H. Cross Co., Smackover	6,000	4,000	4,000
Houston Oil Co., Camden	6,000	(*)	(*)
Kettleman Creek Refining Co., Pearson	5,000	1,500	1,500
Lion Oil & Refining Co., El Dorado	12,000	5,000	4,800
Macmillan Petroleum Products Co., Norphlet	2,000	2,000	2,000
Ouachita Valley Refining Co., El Dorado	2,000	1,350	1,200
Root Refining Co., El Dorado	10,000	2,500	4,000
Simms Oil Co., Smackover	3,000	2,500	2,500
Union Asphalt Co., El Dorado†	.....	.....	.....
Total	48,000	20,150	21,000

*Shut down. †Reduces residuum purchased from Lion Oil & Refining Co., no crude run

New Gasoline Law Makes Evasion Hard in Alabama

The Tucker bill, designed to strengthen Alabama's gasoline tax laws and to make evasion more difficult, has been signed by Governor Miller. Alabama is the fourth southern state so to amend its gasoline tax laws. The others are Kentucky, Louisiana and Mississippi. Tennessee and Arkansas have accomplished the same results by amendment, and bills seeking the same ends probably will be presented before the legislatures of Georgia and Florida.

The Alabama law as amended defines gasoline in such a way as to include all liquid motor fuels, or substitutes therefor, commonly used in internal combustion engines. Every distributor is to be licensed by the State Tax Commission which has power to refuse or revoke licenses. All distributors must file bonds amounting at least to three times the average monthly tax.

All shipments of motor fuels over state highways must be accompanied by invoices or bills of lading giving complete details, and failure to produce such documents, properly prepared, is held to be prima facie evidence of violation of the law. All vehicles hauling gasoline are to be plainly marked "Gasoline." Unloading between 9 p.m. and 5 a.m. is forbidden. All conveyances employed in illegal transportation of motor fuel may be confiscated by the State.

ODORIZATION OF VIKING GAS

CHATHAM, Ontario, Oct. 8.—Northwestern Utilities, Ltd., of Edmonton has commenced the odorization of the natural gas supplied to that city from the Viking Field as a means of safeguarding consumers from possible leaks.

Earlier in the year, experiments with various odorants were undertaken by the company and arrangements were made to inject the odorant into the lines at Bonnie Doon substation just before the gas enters the city mains. The odorant used is a sulphur product of Imperial Oil, Ltd., and although distinct and penetrating is perfectly harmless, and odorless when burned.

This is the first occasion that odorization has been undertaken by a natural gas company in Canada. Natural gases supplied to the majority of Ontario consumers from the Tilbury Field, and to consumers on the Canadian Western pipe line system in southern Alberta from the Turner Valley Field have a sulphuretted hydrogen content, of which the greater part is extracted by a purification process before the gas is distributed.

BATOUM OIL REFINED

CHATHAM, Ontario, Oct. 8.—The initial cargo of 930 tons, or 56,000 bbls. of crude oil from Soviet Russia, recently unloaded at Montreal, is being refined at the LaSalle Petroleum refinery plant at Montreal East. The cargo was brought from Batoum by the Danish tanker Aase Maersk as part of a deal in which the Aluminum Co. of Canada exchanges aluminum products for Soviet crude. Another cargo is expected shortly.

STELLARENE OPERATIONS

CHATHAM, Ontario, Oct. 8.—Following installation of its new Dubbs cracking unit, the Northwest Stellarene Co.'s refining plant at Coutts, Alberta, is running steadily. In addition to shipping gasoline and tractor fuel, the company is developing markets for road oil.

Reduction in Allowable Is Followed by Price Increase

(Continued from Page 9)

period of potential when they can begin producing oil. That this potential, if possible, shall be a 24-hour test.

"That the initial potential of all wells shall continue for 60 days, or 30 days according to the rulings in effect in each field, but in no event to exceed 60 days. At the end of the time allowed for the initial potential, these new wells shall take a field potential test under the same rules and regulations as prevail for other wells in that field.

"That the time allowed from taking the second test until another test is made shall be whatever length of time between general field potentials.

"It is the intention of the commission that every well in the Kansas prorated areas shall secure an equal period of production between potentials with its neighbors, and that it will probably not be necessary to conduct as many field potential tests in the future on account of development bringing each well under a new test on specified calendar dates according to this schedule.

"It is further ordered that wells may produce under their potentials until they change their potentials until they change their methods of production, then each well so affected becomes subject to a new potential which shall stand for that well as long as other wells in the field are allowed to run between their respective potentials."

Oil as Insulating Medium Offered a Larger Market

WASHINGTON, D. C., Oct. 8.—The electrical industry is calling for an improvement of the insulators which are used in the transmission of power and the Bureau of Standards is experimenting with commercial insulating liquids made up of numerous chemical compounds. To this end the bureau has chosen the normal hydrocarbon series because liquids of this series are among the best known insulators and are constituents of commercial insulators. Research paper No. 482 soon to be published describes the preparation of several members of this series in a very pure condition. Observations are now being made on the electrical properties of these liquids and a paper on the results will doubtless appear in the near future.—C. E. K.

F. RAY O'BRIEN DIES

SAN ANTONIO, Tex., Oct. 10.—F Ray O'Brien, prominent among oil men in the Mid-Continent, died in a hospital here September 27. He had been in India and South America at various times in charge of field work for different companies. Mr. O'Brien is one of a family of oil men. Joe O'Brien, a brother, is superintendent for the Carter Oil Co. at Duncan, Okla.; D. E. O'Brien of San Antonio is with the Leonard Petroleum Co., and Tom O'Brien, another brother, is in the oil business living in New York City.

ELK HILLS DECISION UPHELD

WASHINGTON, D. C., Oct. 11.—The United States Supreme Court has declined to review the contention of the Pan American Petroleum Co. that three releases granted it in Naval Petroleum Reserve No. 1, Elk Hills, Calif., were legal

Late Fields

OKLAHOMA

The L. H. Wentz and others' No. 1 Wolff, C SE NW Section 17-20-2w, Noble County community wildcat, which made approximately 2,200 bbls. of oil in 28 hours and was then shut in for about 10 days, was opened for three hours on October 10, making 180 bbls. of oil with a back pressure of 580 pounds. It was again opened and gauged 463 bbls. of oil in 12 hours ending 7 a.m. October 11, against a back pressure of 280 pounds. On a one-hour gauge from 7 a.m. to 8 a.m. October 11 it made 113 bbls. of oil. The gas was estimated at 3,000,000 feet a day. The oil was found in the Wilcox sand at 5,195-97 feet. The owners plan to take a 10-day potential gauge of the well. It is believed the formation from which the oil is flowing is too hard for the well to drill itself in and it may be drilled deeper.

A number of wells will be drilled deeper in the Marshall-Lovell Pool, in Logan County, as the result of a court decision. Cosden Oil Co., which is in receivership, was ordered by the court to deepen its No. 1 Gardner, C NE NW Section 31-19-4w, from its present total depth of 5,954 feet to the new pay horizon, called the School Land sand, which was recently discovered by the Shell Petroleum Corp.'s No. 6 McCully, in the NE cor. SW SE Section 30-19-4w, at 6,169-73 feet.

L. H. Wentz's No. 2 Williams, NW cor. NE Section 31-19-4w, was rigging up preparing to drill deeper from a total depth of 5,963 feet to the new pay horizon.

Shell Petroleum Corp.'s No. 6 McCully, NE cor. SW SE Section 30-19-4w, has been shut in since August 5, and as it is overproduced it will not be put on production until some time near the first of the year. All wells in this area that find production in the School Land sand will be prorated to 50 bbls. per day.

Stanolind Oil & Gas Co.'s No. 1 in the C NE NW Section 33-20-2w, is a location, south of the discovery well. It is located on Magnolia Petroleum Co. acreage.

Indian Territory Illuminating Oil Co.'s No. 4 M.K.T. in Section 34-12-3w, flowed 5 bbls. of oil in 11½ hours from the School Land sand at 6,271-6,489 feet.

Phillips Petroleum Co.'s No. 1 Ness, NE cor. SE NW Section 15-11-3w, flowed 769 bbls. of oil in three hours from the Wilcox sand at 6,456-6,542 feet. The gas was estimated at 2,000,000 feet a day.

Phillips Petroleum Co.'s No. 1 in the SW cor. NW SE Section 22-11-3w, flowed 1,612 bbls. of oil in two and one-half hours from the Wilcox sand at 6,484-6,585 feet. The gas was estimated at 27,000,000 feet a day.

KANSAS

J. E. Mabee and others' No. 1 Nickel, NE cor. SW, Section 33-21-3w, McPherson County, a wildcat well south of the south extension area of the Voshell Pool, found oil in the Hunton lime at 3,465-66 feet. Oil rose 2,500 feet in the hole in 1 hour and 15 minutes and then started flowing at the rate of 25 bbls. an hour by heads. This is the only well in the State outside of the Hollow Pool, in Harvey County, that has found production in the Hunton lime. The Hollow Pool is located about 4½ miles south of this well. The well is about 1½ miles south of production in the south extension of the Voshell Pool.

Derby Oil Co.'s No. 2 Neufeldt, NW cor. NE SE, Section 21-21-3w, in the south extension of the Voshell Pool, in McPherson County, was drilled deeper. This is a new chat producer and it was making around 450 bbls. daily before drilling deeper. Additional tests made after drilling deeper have increased the output to approximately 23 bbls. an hour or to a daily flow of 550 bbls. The top of the chat was found at 3,080 feet and the first production tests were when the total depth was 3,128 feet. It was drilled to 3,134 feet, at which depth it flowed 205 bbls. in nine hours.

The potential tests in the Voshell Pool, in McPherson County, were taken from October 4 to 9. The total daily average for the pool was 10,686 bbls. of oil and 5,924 bbls. of water, from a total of 103 wells. This potential was from 95 deep sand wells which made a total of 9,963 bbls. of oil and 5,727 bbls. of water. The eight chat producing wells made 723 bbls. of oil and 197 bbls. of water.

Two wildcat tests in Ellsworth County were nearing the Siliceous lime pay. Oil and gas showings have been found in both of these tests in the shallow formations, and they are believed to be logging favorably. Phillips Petroleum Co.'s No. 1 Hochman, NE cor. NW SE, Section 17-16-7w, was underreaming 8-inch casing at 2,932 feet. Leo Morgan and others' No. 1 Andrews, NE cor. SW, Section 3-17-8w, was landing the 8-inch casing at 2,900 feet. It found a showing of oil and gas from 2,810-25 feet. Both of these tests are located approximately 12 miles northeast of the Carter Oil Co. and others' No. 1 Ploog well, in Rice County.

A.G.A. AWARDS

William E. Tracy, an inspector of the Kansas City Gas Co., Kansas City, Mo., has been given one of the highest awards within the gift of the American Gas Association for his heroic act in rescuing a woman who had been trapped by fire in a basement. This award established by the later Walter R. Addicks, is known as the American Gas Association Meritorious Service Medal and the presentation to Mr. Tracy was made by President R. W. Gallagher at the fourteenth annual convention in Atlantic City, N. J.

For submitting the best technical paper before a meeting of the American Gas Association last year, R. B. Harper, vice president of the Peoples Gas Light & Coke Co., Chicago, was honored for his paper on "Gas Flames in Conversions to New Gases," submitted before the technical section.

Hugh H. Cuthrell, manager, new business department of the Brooklyn Union Gas Co., Brooklyn, N. Y., was presented with the Charles A. Munroe Award for noteworthy and meritorious work in matters relating to merchandising and dealer co-operation.

NEW OUTLET FOR KENTUCKY OIL

The South Kentucky Pipe Line Co. posted a notice on Tuesday, October 4, that effective at once it would receive and purchase all crude oil produced in Wayne and McCreary Counties, Kentucky, for which it would pay the Somerset oil price, which at present is 85 cents per barrel at the well. The notice adds that checks will be mailed between the first and tenth day of each month for oil purchased in the preceding month. The headquarters of the South Kentucky Pipe Line Co. is in Somerset, Ky.

G. A. HILL HEADS HOUSTON OIL

HOUSTON, Tex., Oct. 11.—George A. Hill, Jr., was elected president of the Houston Oil Co. of Texas and also of the Houston Pipe Line Co., a subsidiary of the former, at a meeting of directors of those companies in St. Louis, October 9. He succeeds E. H. Buckner, who has been inactive for several months because of ill health. At the same meeting George D. Sears, a law partner of Mr. Hill, was appointed general counsel for the companies to fill the vacancy created by the election of Mr. Hill to the presidency.

R. L. FARIS DIES

Capt. Robert Lee Faris, assistant director of the Coast and Geodetic Survey of the Department of Commerce, died unexpectedly October 6 at his home in Washington. He was 64 years old. He was a member of the survey staff for 41 years, assistant director for 18 years.

GERMAN PRODUCTION

Production of petroleum in Hanover, Germany, during the first half of the present year came to 727,951 bbls., compared with 584,808 bbls. in the first half of 1931. The increase came from the Nienhagen wells, which provided 238,679 bbls. in the first half of 1931 and 367,262 bbls. in the corresponding period of this year.

California Oil Field Operations for August, 1932

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for August amounted to 14,839,951 bbls., an average of 478,708 bbls. per day. This is an increase of 6,852 bbls. per day over July production.

Total stocks of crude and all products in Pacific Coast territory increased during the month 34,359 bbls. The total stocks at the end of the month were 170,526,713 bbls. The total stock increase for 1932, up to August 31, was 690,764 bbls.

Twelve wells were completed during the month with an initial daily production of 21,648 bbls., compared with 17 wells completed during July with an initial production of 24,471 bbls.

CRUDE PETROLEUM PRODUCTION
(Figures of production and stocks are in barrels in 42 gals.)

	Barrels per month	Daily average Aug., 1932	Daily average July, 1932	Daily average Aug., 1931
Group No. 1:				
Coalinga	336,163	10,844	11,053	7,615
Elk Hills	380,881	12,286	12,243	12,190
Fruitvale	151,557	4,892	4,213	2,201
Kern River	276,734	8,927	9,077	10,660
Kettleman Hills-Belridge	1,868,906	60,287	61,310	63,387
Lost Hills-Belridge	267,065	8,615	8,553	9,391
McKittrick	57,453	1,853	1,818	1,895
Midway-Sunset	1,520,611	49,052	49,083	49,933
Mount Poso	253,470	8,177	8,001	9,026
Round Mountain	67,397	2,174	2,921	452
Wheeler Ridge	15,726	507	502	499
Group No. 2:				
Elwood	430,245	13,879	14,191	26,201
Rincon	47,322	1,526	1,582	1,945
San Miguelito	36,747	1,185	108	.....
Santa Barbara	18,177	586	501	255
Santa Maria	97,884	3,158	2,953	3,072
Summerland	3,526	114	108	168
Ventura Avenue	978,539	31,566	29,821	39,733
Ventura-Newhall	109,699	3,539	3,498	3,239
Watsonville	1,938	62	62	62
Group No. 3:				
Coyote	318,202	10,265	10,050	10,501
Domingues	545,762	17,605	15,232	11,082
Fullerton (Brea Olinda)	249,872	8,060	8,159	9,480
Huntington Beach	687,341	22,172	21,635	20,548
Inglewood	417,961	13,483	13,728	13,770
Lawndale	9,295	300	312	366
Long Beach	2,250,465	72,596	70,838	75,931
Los Angeles-Salt Lake	32,173	1,038	1,025	1,150
Montebello	187,383	6,045	6,177	6,390
Playa Del Rey	455,536	14,695	15,088	22,550
Potrero	40,688	1,313	517	870
Richfield	192,303	6,203	6,264	6,361
Rosecrans	98,708	3,184	3,030	3,264
Santa Fe Springs	1,822,497	58,790	58,023	62,294
Seal Beach	381,846	12,318	12,750	11,768
Torrance	195,456	6,305	6,347	5,890
Whittier	34,323	1,107	1,083	1,312
Total	14,839,951	478,708	471,856	505,451
July	14,627,550	471,856		
Increase	212,401	6,852		

TOTAL STOCKS HELD BY CALIFORNIA OIL COMPANIES, BOTH INSIDE AND OUTSIDE THE UNITED STATES

	Aug. 31, 1932	July 31, 1932	Aug. stock increases	Aug. 31, 1931
Heavy crude and all grades of fuel, gas and Diesel oils	101,621,925	101,230,464	391,461	100,764,088
Refinable crude	40,064,558	40,297,652	*243,094	42,332,341
Finished gasoline, engine distillate and natural gasoline	16,415,703	16,523,748	*108,045	15,499,404
Crude gasoline and naphtha distillates	4,818,520	4,860,823	*42,303	3,263,557
All other stocks	†7,616,007	‡7,579,667	36,340	§9,662,258
Total all stocks	170,526,713	170,492,354	34,359	171,511,648

*Decrease. Barrels of coke included .... †660,386 ‡661,653 §656,966

OIL FIELD DEVELOPMENT

	New rigs up	Active drill'g	Prod'rs completed	Daily initial output	Active producing	Abandoned Drlrs.	Abandoned Prodrs.
Group No. 1:							
Coalinga	...	...	...	.....	642	...	...
Elk Hills	...	...	...	.....	183	...	...
Fruitvale	3	7	3	1,334	41	...	...
Kern River	...	...	...	.....	963	...	...
Kettleman North Dome	1	10	2	17,188	29	...	...
Kettleman Middle Dome	...	2	...	.....	.....	...	...
Lost Hills-Belridge	...	2	...	.. ..	156	...	...
McKittrick	...	1	...	.....	111	...	...
Midway-Sunset	...	2	...	.....	1,770	...	...
Mount Poso	1	2	...	.....	87	1	...
Round Mountain	...	...	...	.....	15	...	...
Wheeler Ridge	...	...	...	.....	34	...	...
Group No. 2:							
Capitan	...	1	...	.....	.....	...	...
Elwood	...	...	1	1,074	35	...	...
Rincon	...	1	...	.....	33	...	...
San Miguelito	...	1	...	.....	2	...	...
Santa Barbara	1	1	...	.....	6	...	...
Santa Maria	...	2	...	.. ..	171	...	...
Summerland	...	...	...	.....	64	...	...
Ventura Avenue	1	4	...	.....	134	2	...
Ventura-Newhall	1	8	1	98	428	1	...
Watsonville	...	...	...	.....	6	...	...
Group No. 3:							
Coyote	1	2	1	75	84	...	10
Domingues	...	2	1	1,376	42	...	...
Fullerton	...	...	...	.....	357	...	...
Huntington Beach	...	...	...	.....	369	1	1
Inglewood	...	1	...	.....	216	...	...
Lawndale	...	...	...	.....	6	...	...
Long Beach	...	2	2	503	942	3	3
Los Angeles-Salt Lake	..	...	...	.....	241	...	8
Montebello	1	...	...	.....	170	...	...
Playa Del Rey	1	3	...	.....	184	...	...
Potrero	...	2	...	.....	12	...	...
Richfield	...	...	...	.....	152	...	...
Rosecrans	...	...	...	.....	67	...	...
Santa Fe Springs	...	1	...	.....	497	...	1
Seal Beach	1	2	...	.....	106	...	...
Torrance	...	...	...	.....	378	...	...
Whittier	...	...	...	.....	140	...	...
Miscellaneous drilling	...	44	...	.....	.....	7	...
Group No. 4:							
Buttonwillow gas field	2	...	1	gas	1	1	...
Dudley Ridge gas field	...	2	...	.....	.....	...	...
Total August	14	105	12	21,648	8,874	16	23
Total July	15	101	17	24,471	8,949	19	10
Decrease	1	*4	5	2,823	75	3	*13
Average for year 1931	22	207	21	30,370	8,911	20	15
Average for year 1930	80	434	63	48,710	9,632	21	27
Average for year 1929	109	610	76	100,625	10,550	26	18

*Increase.

SERVICE ON NEW FIELDS

The Perry Field in Southern Noble County, Oklahoma

(Continued from Page 63, October 6, 1932)

DRILLING CONDITIONS

Drilling water.

Wentz and others' well was drilled with the aid of impounded water. The city of Perry gets its water supply in the same way (storing it in reservoirs), the supply being adequate and the quality of water being good. The rainfall in central Oklahoma is frequent and copious and most of the water used on the farms, including stock and dairy farms, in Noble County is impounded, some of the ponds being of large size. It is good, soft water, and does not need to be treated.

Boiler fuel.

Natural gas was used for fuel by the company drilling this well and it was also used by the Magnolia Petroleum Co. in the drilling of its wells in the area to the north. The discovery well of L. H. Wentz and others used gas from the Cities Service Co. main line, which is located about 2 miles east of the well. This is a 20-inch pipe line and passes through the township and will be able to supply all future development with a plentiful supply of gas. The cost is 18 cents per 1,000 cubic feet.

How wells are drilled.

The drilling of the discovery well was done by contract work and as this is customary in that part of the state the majority of the future wells, it is expected, will be done by contract work.

Cost of drilling.

Well costs in this field are expected to vary as they do in the field to the north of this wildcat well. The difference in the depths account for the difference in the cost. The cost of the discovery well is estimated at $65,000. The future average cost for the drilling is expected to be in the neighborhood of $6 to $8 per foot, and as only one long string of casing was used in the discovery well it will help reduce the cost of drilling in this area. The average future cost per well is now placed at $40,000 to $50,000.

Drilling time to complete wells.

As with the cost of these wells, the drilling time varies in individual tests. An estimated average time is from 50 to 60 days where the operator plans to drill to the Wilcox sand only, and not make any tests of shallow sands that may be found while the well is drilling. The Wilcox sand is expected to be uniform in this field and will be found in the wells at a depth of approximately 5,200 feet.

Type of drilling equipment.

The discovery well was drilled with a heavy rotary drilling unit and was powered with a Waukesha gas engine. The other equipment is the same as is being used in other fields in the western part of the state. Cable tools were used in Wentz and others' well to drill into the Wilcox sands.

Derrick.

Steel, 122 feet, was used at the discovery well.

Type of bits.

Cone bits were used and the same type of drill stem that is being used in the other deep fields in the state, such as Oklahoma City.

Drilling mud.

Natural mud was made in the drilling of the Wentz well and admixtures were not needed. While this well was drilling it did not find any high-pressure gas sands and unless these are found, admixtures are not believed to be needed.

Casing.

No standard procedure has as yet been established in this field. The discovery well, in Township 20-2w, used only two strings of casing. The 15-inch casing was landed and cemented at 136 feet, and the next string was the 8-inch casing which was landed at 5,070 feet and cemented. This string of 8-inch casing is also being used as the production string.

Drill stem tests.

Drill stem tests were not made at the discovery well, but each formation was cored from 5,014 feet to the total depth.

Gas hazards and blowout preventers.

Blowout preventers and such other equipment were not necessary at the discovery well.

Straight-hole drilling.

There is no state law requiring the contractor to drill a straight hole, but the companies that were having the Wentz and others' well drilled specified that weight indicators be used and the hole surveyed at regular intervals. The hole was surveyed at the following depths: At 700 feet it was straight; at 1,250 feet, straight; at 1,500 feet, straight; at 1,750 feet, straight; at 2,000 feet it was 1 degree off vertical, which was corrected, and at 4,750 feet it was found to be straight and it is straight at its present total depth of 5,197 feet.

PIPE LINES

The Continental Pipe Line Co.'s 8-inch trunk line from the Oklahoma City Field to the Continental Oil Co.'s refinery at Ponca City, lies about 3 miles east of L. H. Wentz and others' No. 1 Wolff, in the new pool in Section 20-2w. The gas line which supplied fuel for drilling the well is to be converted into an oil line and will be extended to the Continental pipe line and connected. The Champlin Pipe Line Co. has a 3-inch pipe line to the Magnolia Pool, about 6 miles to the northeast. The Magnolia Pool is located in Sections 15, 16, 21 and 22-21-2w. Production is prorated and all the oil is handled through the Champlin line, which runs north to the company's 8-inch pipe line which connects with the Champlin Refining Co.'s refinery at Enid. The Champlin Refining Co. also has a loading rack at Orlando, which is located about 8 miles south of L. H. Wentz and others' No. 1 Wolff. Cosden Pipe Line Co. has a 6-inch pipe line about 10 miles east of the new well; Texas-Empire Pipe Line Co. has an 8-inch line within 9 miles of the well. Stanolind Pipe Line Co. has a line about 12 miles north. The Shell Pipe Line Co. has two lines in the vicinity, one 13 miles to the northwest and a 6-inch line about 15 miles to the east and north of Wentz and others' well. Neither the Oklahoma Pipe Line Co. nor the Gulf Pipe Line Co. has pipe lines in that vicinity, although both have an interest in the well and the acreage surrounding.

PRODUCTION PRACTICE

Method of producing wells.

The only well yet in Township 20-2w flowed naturally until all tankage was filled, whereupon it was shut in. It is expected that it will be limited to 50 bbls. a day under the proration rules now in force in the state requiring all wildcat wells to be curtailed to 50 bbls. per day. The well may not be produced commercially until the market condition improves. The other wells in the Magnolia Pool to the northeast are being curtailed to about 800 bbls. per day.

Gravity of the oil.

The gravity of the oil in the discovery well is said to have been 42.5 degrees A.P.I. This is about the same kind of oil that is found in the deep sand wells in the Magnolia Pool, 6 miles northeast of the discovery well. This class of oil is desirable and should be in demand when conditions in the oil industry improve.

Water conditions.

The discovery well did not find the usual water sands while drilling, indicating that it was on a structure, but a number of water sands are expected to be found in wells drilling down the structure.

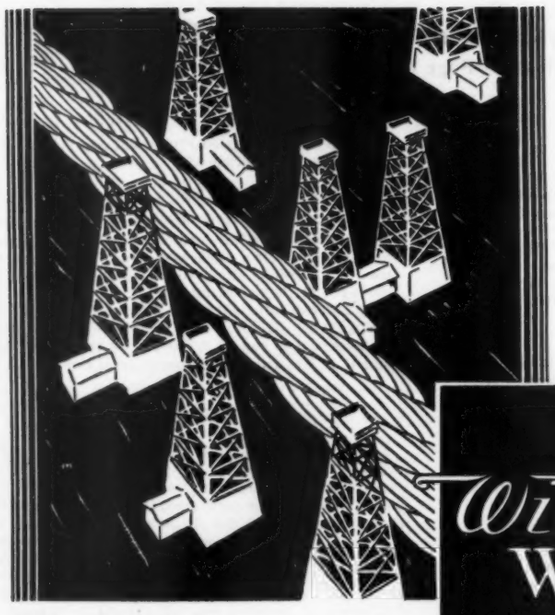
Separators and tankage.

The operators have erected two high-pressure separators at the location and five 500-bbl. storage tanks. As this is considerable distance from a pipe line, additional storage may be necessary.

Artificial lifting conditions.

Artificial lifting of the crude oil is not necessary at present. However, later when it becomes necessary to lift the crude oil, gas is available in sufficient volume to permit artificial lifting methods.

(Continued on Next Page)



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SERVICE ON NEW FIELDS

The Perry Field in Southern Noble County, Oklahoma

(Continued from Preceding Page)

Paraffin.

None.

Cut oil.

The oil from Wentz and others' well is not cut.

Are wells shot?

Not yet.

Gas-oil ratio.

Gas-oil ratio not yet determined.

Well head pressures.

Working pressures range from 1,100 to 1,500 pounds.

Bottom hole pressures.

On one bottom hole test the well showed 1,065 pounds.

Proration restrictions.

The Corporation Commission has ordered that all wildcat wells when completed be placed on a 50-bbl.-per-day allowable in all parts of the state, regardless of their size or depth.

GENERAL CONDITIONS

Principal leaseholders.

Wentz and others' well was drilled on a 2,160-acre block. The companies divided the interests into 108 units. The companies interested in the block and their interest are as follows: Shell Petroleum Corp., 37 units; Gypsy Oil Co., 16; Sinclair Prairie Oil Co., 16; L. H. Wentz, 12; Twin State Oil Co., 8; Carter Oil Co., 8; Phillips Petroleum Co., 8, and Empire Oil & Refining Co., 3. Companies owning acreage adjoining the block are Carter Oil Co., Magnolia Petroleum Co., Shell Petroleum Corp., Mid-Continent Petroleum Corp., The Texas Company, Marland Oil Co., L. H. Wentz, Minnehoma Oil Co., Noble Oil & Gas Co., T. B. Slick estate, W. O. Allen, Amerada Petroleum Corp. and Stanolind Oil & Gas Co.

Acreage Ownership Within and Close to Community Block of L. H. Wentz and Others in Township 20n-2w, Noble County, as of Record September 1, 1932

Leasing company—	Description	Acres	Expiration date
Magnolia Petroleum Co.	N half SW Sec. 6	80	Oct. 14, 1932
Magnolia Petroleum Co.	S half SW Sec. 6	80	Oct. 14, 1932
Carter Oil Co.	SW Sec. 6	160	Feb. 17, 1933
C. F. Noble O. & G. Co.	W half SW Sec. 5	80	Feb. 23, 1933
Gypsy Oil Co.	E half SW Sec. 5	80	Feb. 23, 1933
Shell Petroleum Corp.	SE Sec. 5	160	Dec. 5, 1934
Continental Oil Co.	SW Sec. 4	160	June 18, 1938
Gypsy Oil Co.	NW Sec. 7	160	Oct. 12, 1934
Twin States, Wentz et al	N half NW Sec. 8	80	Mar. 8, 1933
Shell Petroleum Corp. et al	S half NW Sec. 8	80	Dec. 10, 1934
Twin State et al	NE Sec. 8	160	Dec. 9, 1934
Empire Oil & Gas Co.	NW Sec. 9	160	June 6, 1935
L. H. Wentz-T. B. Slick	NE Sec. 9	160	Feb. 14, 1935
Cosden Oil Co.	W half SW Sec. 7	80	Mar. 27, 1930
Shell Petroleum Corp.	E half SW Sec. 7	80	Dec. 16, 1939
Twin States et al	SW Sec. 7	160	Mar. 19, 1933
Twin States et al	S half Sec. 8	320	Mar. 1, 1933
L. H. Wentz et al	SW Sec. 9	160	Aug. 31, 1937
W. O. Allen et al	SE Sec. 9	160	June 8, 1936
The Texas Company	NW Sec. 18	160	Sept. 30, 1937
Twin States et al	NE Sec. 18	160	Dec. 12, 1934
Twin States et al	NW Sec. 17	160	Dec. 10, 1934*
Twin States et al	NE Sec. 17	160	Dec. 9, 1934
Marland	NW Sec. 16	160	May 19, 1933
Marland	NE Sec. 16	160	May 9, 1933
Continental Oil Co.	N half SW Sec. 18	80	July 24, 1933
Continental Oil Co. et al	S half SW Sec. 18	80	July 24, 1933
Twin States et al	SE Sec. 18	160	Dec. 28, 1934
Twin States et al	SW Sec. 17	160	Oct. 1, 1933
Twin States et al	SE Sec. 17	160	Jan. 20, 1937
The Texas Company	SW Sec. 16	160	June 30, 1937
W. O. Allen	SE Sec. 16	160	June 29, 1937
T. B. Slick	NW Sec. 19	160	June 25, 1934
Twin States et al	NE Sec. 19	160	Mar. 29, 1933
Twin States et al	NW Sec. 20	160	Mar. 16, 1937
Shell Petroleum Corp.	W half NE Sec. 20	80	June 12, 1933
Minnehoma Oil Co.	E half NE Sec. 20	80	Nov. 23, 1934
Cosden Oil Co.	W half NW Sec. 21	80	May 20, 1936
Carter Oil Co.	E half NW Sec. 21	80	Nov. 26, 1933
Champlin Refining Co.	NE Sec. 21	160	May 14, 1933
Shell Petroleum Corp.	N half SW Sec. 19	80	Nov. 12, 1939
Gypsy Oil Co.	S half SW Sec. 19	80	Feb. 4, 1934
Shell Petroleum Corp.	SE Sec. 19	160	Apr. 19, 1933
Carter Oil Co.	SW Sec. 20	160	June 20, 1935
Magnolia Petroleum Co.	W half SE Sec. 20	80	Feb. 25, 1942
W. O. Allen	E half SE Sec. 20	80	Mar. 2, 1937
Roxana Petroleum Co.	SW Sec. 21	160	Nov. 20, 1933
W. O. Allen	N half SE Sec. 21	80	Aug. 26, 1934
Margay Oil Co.	S half SE Sec. 21	80	Sept. 12, 1937

*Discovery lease.

Character of lease blocks.

With the exception of the 2,160-acre unit block most of the acreage in this township is in 80 and 160-acre tracts, with the exception of a few scattered 40-acre leases. Some of these leases expire in 1933 and it is generally believed that the landowner will want a substantial bonus for a renewal of the lease and in the majority of cases it may be to the owner's advantage to drill a well on these tracts.

Gas production.

South of Perry, in Townships 21-1w and 20-1w is a gas field opened by the Alco Royalty Co. with a large gasser at 3,400 feet. A number of other wells have been drilled in the field, the largest one coming at 36,000,000 feet, with a rock pressure of 1,350 pounds. The Apache Gas Co. distributes the gas, but the wells thus far have produced but a small part of their capacity.

Gasoline plants.

No gasoline plants have yet been constructed.

Natural hazards.

No natural hazards have been encountered.

Legal tangles.

No legal tangles have developed as yet in this field as the titles to the land are said to be well established.

Log of L. H. Wentz and Others' No. 1 Wolff, C SE NW Section 17-20-2w, Noble County, Oklahoma

Feet	Formation—	Feet	Formation—	Feet	Formation—
40	Clay	2,625	Shale	3,816	Sand (cored)
44	Lime	2,630	Sand	3,898	Blue shale
55	Brown lime	2,640	Sand and shale	3,935	Sand and lime
70	Brk. sand	2,650	Hd. lime	3,956	Shale and shells
90	Water sand	2,667	Shale	3,959	Sand
110	Red bed	2,677	Shale	3,972	Sandy shale
136	Sandy, 15½ csg.	2,688	Lime	3,990	Sand (cored)
160	Sand	2,708	Sandy shale	4,010	Sand (cored)
205	Clay and sand	2,711	Sand	4,037	Sand and shale
593	Brk. sand and shale	2,725	Br. sand	4,165	Sand and shale
		2,735	Br. sand	4,182	Red rock
680	Sand and shale	2,737	Shale	4,190	Sand
700	Lime	2,750	Sand	4,195	Shale
765	Red bed, sand	2,770	Sand	4,230	Shale blue
800	Sand and shale	2,775	Hard sand	4,235	Sandy lime
860	Shale	2,790	Blue shale	4,248	Sandy lime
885	Lime	2,808	Shale and sand	4,284	Shale
1,000	Shale	2,814	Red rock	4,290	Lime and shale
1,052	Sandy lime	2,828	Sand	4,314	Shale
1,080	Shale	2,877	Shale, red rock	4,340	Shale and shells
1,085	Lime	2,884	Red rock	4,375	Shale and sand
1,195	Shale	2,890	Sand	4,385	Shale
1,205	Shale	2,900	Hard sand	4,390	Sand
1,225	Lime	2,911	Sand, shale	4,405	Sandy shale
1,260	Lime and shale	2,913	Soft sand	4,422	Sandy lime
1,310	Shale	2,928	Sand	4,434	Shale
1,345	Sand	2,932	Hard sand	4,450	Hard shale
1,525	Lime shale	2,940	Shale	4,480	Shale and sand
1,540	Lime	2,988	Shale and lime	4,500	Shale
1,590	Broken lime	2,990	Lime	4,520	Shale
1,615	Lime	2,998	Sand and shale	4,540	Lime (Oswego)
1,620	Shale	3,002	Lime	4,544	Br. lime, shale
1,675	Sandy lime	3,034	Sandy shale	4,565	Lime and shale
1,785	Lime and shale	3,038	Shale	4,570	Blue shale
1,860	Sandy lime	3,050	Lime	4,585	Lime and shale
1,890	Shale	3,058	Red rock	4,608	Lime and shale
1,893	Sandy shale	3,065	Lime and shale	4,630	Lime and shale
1,930	Shale	3,080	Shale	4,643	Shale and lime shells
1,940	Lime	3,090	Lime		
1,955	Shale	3,098	Lime and shale	4,665	Lime
2,035	Shale and lime	3,114	Shale	4,678	Br. lime
2,042	Sand	3,117	Lime	4,694	Br. lime
2,070	Shale	3,126	Shale	4,706	Br. lime, shale
2,150	Br. lime, shale	3,145	Sandy shale	4,710	Shale
2,170	Shale	3,160	Sand	4,722	Lime
2,180	Shale and lime	3,180	Sand and shale	4,729	Lime and shale
2,200	Shale	3,202	Shale	4,740	Lime
2,227	Lime	3,235	Shale and shells	4,753	Lime and shale
2,235	Sandy lime	3,255	Lime	4,778	Lime and shale
2,240	Sandy lime	3,270	Sand and shale	4,783	Lime
2,320	Shale	3,284	Shale	4,796	Shale and lime
2,324	Shale and lime	3,293	Lime	4,820	Lime and shale
2,338	Sand	3,304	Shale	4,830	Br. lime
2,385	Lime	3,335	Shale	4,853	Shale
2,395	Br. lime	3,392	Shale and shells	4,868	Shale
2,405	Shale	3,428	Sand and shale	4,874	Lime
2,420	Lime	3,438	Shale	4,909	Shale
2,430	Sandy lime	3,445	Sand and shale	4,937	Shale
2,452	Sandy lime and shale	3,451	Dark sand	4,947	Sandy shale
		3,466	Sand	4,949	Lime
2,458	Sand	3,481	Shale	4,966	Sand and shale
2,478	Sandy lime	3,487	Sand and shale	4,980	Shale
2,482	Sandy lime, br.	3,505	Shale	5,000	Shale
2,487	Shale	3,543	Sand and shale	5,009	Shale
2,495	Sandy lime	3,554	Shale	5,012	Clay
2,515	Lime shale	3,560	Sand	5,014	Lime and shale
2,520	Shale	3,581	Shale	5,027	Lime
2,542	Sand	3,652	Shale	5,065	Lime
2,545	Br. sand	3,675	Lime	5,077	Lime, 8-in. csg.
2,550	Sand and shale	3,690	Shale	5,125	Sandy dolomite
2,560	Shale	3,705	Lime and shale	5,168	Sand
2,570	Br. lime	3,722	Lime	5,182	Hard sand
2,575	Shale	3,767	Lime and shale	5,188	Green shale
2,583	Shale	3,778	Shale	5,193	Sand
2,588	Sand	3,805	Shale	5,197	Sand. T.D.
2,610	Sand and shale	3,808	Sandy lime		

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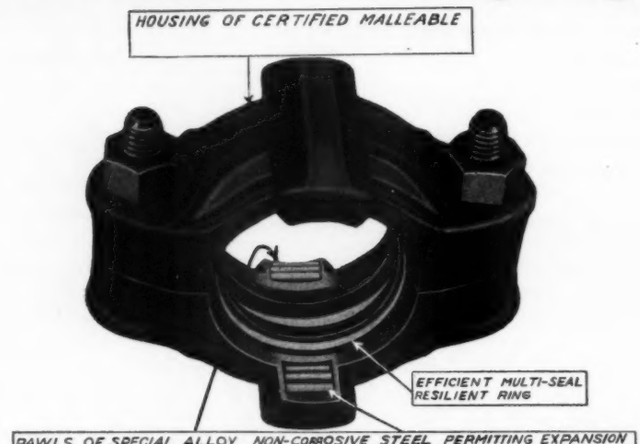
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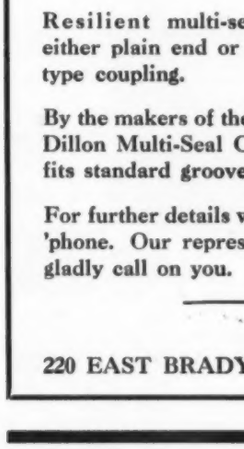

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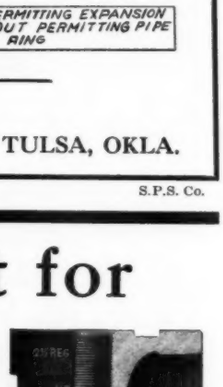

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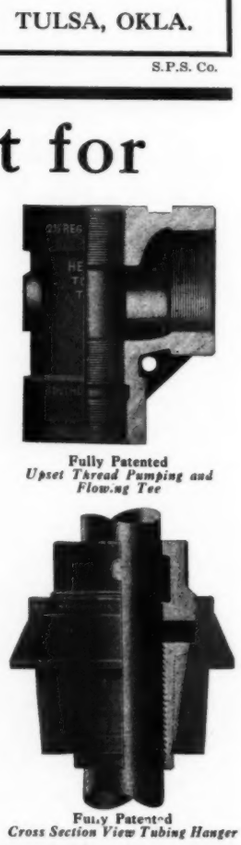

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Cross Section View Tubing Hanger

Coke County Wildcat Proves Disappointment; 16 Locations in Ranger, 29 in Wichita

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Oct. 10.—One of the most interesting wildcats drilling in the district was abandoned this week. This test was put down by the Mid-Kansas Oil & Gas Co. on its Henry lease in Section 271, Block 1-A, H.&T.C. Survey, Coke County. Total depth is 4,007 feet. The test was the second drilled by the company in the area, and the second to get a good showing of oil, but not proving a commercial producer. The showing was logged at 3,940-42 feet.

The Tribal Oil Co. completed its No. 2 Edwards, in the western extension of the Glasscock County area, this week, for one of the best wells of the field. It topped the pay at 2,085 feet and logged an increase at 2,102 and 2,105 feet, flowing 125 bbls. per hour on a Railroad Commission test. It is 2,292 feet from the west and 330 feet from the south of Section 16, Block 33, Township 2s, T.&P. Survey, Glasscock County, and marks the second producer drilled in this area by the company. A third location has been staked for another test in the section.

This company was recently formed by Noel T. Lawson of San Angelo, and a group of Big Spring men. An 80 acres was farmed out by The Texas Company to the new company on which to drill its first well, which came in making an initial production of 90 bbls. per hour on the pump.

A well was drilled 1½ miles to the west three years ago, but that well was never produced although it showed as a commercial producer from pay logged from 2,278-88 feet. Tests will now be drilled on intervening acreage, which may be proven all the way to the Glasscock well on the Bill Edwards ranch in Section 18, Block 33, Township 2s, T.&P. Survey, to the west.

Sid Richardson and others' No. 1 Scarborough in Section 1, Block 77, Public School Lands Survey, northern Winkler County, came in this week for one of the largest wells drilled in the county in several years, and adding the second big well for the district during the week. On an open flow it made 170 bbls. in one hour, being completed for an initial production of 960 bbls. per day on choke. Pay was topped at 2,841 feet, and the hole was bottomed at 2,875 feet. Three other tests are preparing to drill in this section.

As a result of the large production being made in the Richardson test, the Magnolia Petroleum Co. is deepening its No. 3 Scarborough in the same section, from 2,876 feet in an effort to pick up heavier production.

Westyde Investment Co.'s No. 1 R. H. Looney, Section 15, Block 33, Township 4n, T.&P. Survey, on the western side of Borden County, topped the salt at 1,314 feet, said to be around 28 feet higher than it was topped in the Phillips Petroleum Co.'s No. 1 Good in Section 46, 5 miles to the south. Elevation in the Looney test is 2,638 feet.

RANGER AND WICHITA FALLS

Arab Gasoline Co.'s No. 1 Hart, located in the center of the northeast of the southwest of Section 57, Block 4, H.&T.C. Survey, Eastland County, has been completed for an initial production of 5,000,000 feet of gas per day from pay sand topped at 2,040 feet. It is producing with 600-pound rock pressure.

The new gasser is 2 miles northwest of the Lake Eastland Pool, and is a 1-mile south extension to the gas area. The company will utilize the gas in its casinghead gasoline plant in the area. A location has been staked one-half mile to the south.

An experiment has been carried on in one of the deep lime producing wells in the Breckenridge area, increasing production from that well approximately 400 per cent. As a result of this acid treatment of this well and the resultant increase in production several other wells are now being treated by the Independent Torpedo Co., and every deep producer in the area may eventually be treated in an effort to increase their production. This treatment of wells is not new, wells in Michigan and the Gulf Coast having been treated likewise, but it is something new to the Ranger district.

There were 16 locations staked in the Ranger district this week. Shackelford led the counties with five new locations. Eastland was second with four, Callahan had three, Coleman two and Brown County two.

F. H. E. Oil Co.'s No. 1 Coffield in the southeast corner of the Charles Lydings Survey, in the southeast corner of Archer County, and 3 miles northwest of Anarene, has proved a northwest extension to the lately discovered Hamilton-Ikard Pool. The well is producing 25 bbls. per day after a 60-quart shot from 1,167-69 feet.

There are 110 active tests going down in the Wichita Falls district, with 75 on the inactive list. There were 33 completions in the district this week, and 29 new locations staked.

W. B. Hamilton's No. 2 Ikard in the above mentioned pool, proved dry in the regular pay, but is now drilling deeper to make a Canyon test. Total depth is 1,650 feet. Top of the Gunsight lime was logged at 1,143 feet. Elevation is 1,072 feet.

Iron Mountain Oil Co. has taken over The Texas Company's E. P. Tatum lease in Section 1,908, T.&L. Survey, adjacent to the former company's lease on which it has nine wells. The newly purchased lease has one producer.

Wildcat Operations in West Texas

Week Ending October 10

Company, well, farm name, section and block—	Remarks—
BORDEN COUNTY	
Westyde Investment Co.'s No. 1 Looney, 990 ft. from S and E. Sec. 15, Blk. 31, Twp. 4n, T.&P. Sur.	Drlg. 1,020 ft.
BREWSTER COUNTY	
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	S.D. 1,935 ft.
S. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	S.D. 1,302 ft.
Joiner's No. 1 McIntire, 853 ft. from S and 2,390 ft. from E, Sec. 31, Blk. 352, W. J. Mitchell Sur.	S.D. 240 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	S.D. 2,900 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles south Alpine	S.D. 1,750 ft.
CONCHO COUNTY	
Beesley et al's No. 1 Waring Estate, 400 ft. from N and E, Sec. 163, T.&N.O. Sur.	Drlg. 2,300 ft.
Simmons et al's No. 1 Schultz, 150 ft. from W and center N and S of E half of J. Weber Sur., Abst. 154.	S.D. 975 ft.
CROCKETT COUNTY	
Doleman & Moore's No. 1 Ferner, 2,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and S.D.
Stanolind Oil & Gas Co. et al's No. 1 Todd, 1,370 ft. from N and 1,320 ft. from E, Sec. 67, Blk. UV, G.C.&S.F. Sur.	Drlg. 5,425 ft.
The Texas Company's No. 1 B. B. Ingham, 330 ft. from S and 2,330 ft. from E line, Sec. 36½, I.&G.N. Sur.	Fishing 1,954 ft.
J. D. Young Co.'s No. 1 Shannon, 330 ft. from N and W, Sec. 35, Blk. 1, G.C.&S.F. Sur.	S.D. 210 ft.
CULBERSON COUNTY	
Harris & Haun's No. 1 fee	Drlg. 500 ft.
Milton-Dorsey's No. 1 Biggs, 4,181 ft. from N and 150 ft. from E, Sec. 2, Blk. 112, P.S.L. Sur.	Location.
DAWSON COUNTY	
Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur.	Shut down.
ECTOR COUNTY	
Broderick & Calvert's No. 1 Parker, 330 ft. from N and W, Sec. 15, Blk. 44, Twp. 2s, T.&P. Sur.	Show oil 4,178 and 4,185 ft.; drlg. 4,335 ft.
Duffey et al's No. 1 Rutledge, 990 ft. from S, 330 ft. from E, Sec. 7, Blk. B-15	Drlg. 250 ft.
L. C. Harrison et al's No. 1 Addis, 330 ft. from N and 1,320 ft. from W, Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur.	T.D. 3,690 ft.; drlg. by bailer.
Phillips Pet. Co.'s No. 1 Scharbauer, 990 ft. from S and 330 ft. from W Sec. 43, Blk. 44, Twp. 2s, T.&P. Sur.	Cmtd. csg. 3,560 ft.
Thomas et al's No. 1 Edwards, 330 ft. from S, 2,310 ft. from E, Sec. 38, Blk. 43, Twp. 3s, T.&P. Sur.	S.D. 3,300 ft.
S. F. Wurts' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur.	S.D. 3,605 ft.
EL PASO COUNTY	
Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. 254, S.P. No. 7,247	T.D. 3,190 ft.; to straighten hole.
FISHER COUNTY	
Cranfill & Reynolds' No. 1 George, 400 ft. from N and 330 ft. from E, Sec. 200, Blk. 1, B.B.B.&C. Sur.	Drlg. 6,280 ft.
Southern Oil Co.'s No. 1 Purdue, 990 ft. from S and E Sec. 202, Blk. B, B.B.&C. Sur.	S.D. 2,682 ft.
GLASSCOCK COUNTY	
Continental Oil Co.'s No. 2 Hart-Phillips, 660 ft. from N, 1,980 ft. from W, Sec. 24, Blk. 33, Twp. 2-s, T.&P. Sur.	S.D. 2,610 ft.; plugged back to 2,455 ft.; cleaning out.
S. C. Mann's No. 1 Moore, C NE, Sec. 11, Blk. 35, Twp 3s, T.&P. Sur.	Drlg. by bit 3,045 ft.
Phillips Pet. Co.'s No. 1 Baker, 150 ft. from N and 1,520 ft. from E, Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur.	Drlg. 1,152 ft.
Tribal Oil Co.'s No. 1-B Edwards, 180 ft. from S and 1,145 ft. from E, Sec. 16, Blk. 33, Twp. 2s, T.&P. Sur.	Spudding.
HOWARD COUNTY	
American-Maracaibo's No. 5-A Settles, 1,896 ft. from N, 1,884 ft. from W, Sec. 6, Blk. 32, T.&P. Sur.	S.D. 185 ft.
Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W. Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur.	Spudded and S.D.
Myers et al's No. 1 Denman, 2,305 ft. from S and 2,320 ft. from E Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur.	S.D. 1,030 ft.; straightening hole.
McCastin-Smith's No. 1 Roberts, 2,440 ft. from N and 648 ft. from E, Sec. 128, Blk. 29, W.&N.W. Sur.	Drlg. 1,070 ft.
Mid-Continent Oil & Gas Co.'s No. 1 Denman, 990 ft. from S and 330 ft. from E Sec. 10, Blk. 30, Twp. 1s, T.&P. Sur.	Machine.
Pure Oil Co.'s No. 13 Chalk, 330 ft. from N and E, Sec. 125, Blk. 29, W.&N.W. Sur.	T.D. 1,730 ft.; T.P. 1,613 ft.; cleaning out.
Sinclair-Prairie Oil Co.'s No. 3 Dodge, 1,650 ft. from S and 429 ft. from W, Sec. 11, Blk. 30, Twp. 1s, T.&P.	Drlg. 2,350 ft.

(Continued on Page 46)

PANHANDLE DISTRICT

Devore and Levy have taken a 16,280-acre block in Randall County, and will drill a test. The block is in Block 2, A.B.& M. Survey, Block 6, I.&G.N., and Block 8, I.&G.N. Survey, in the northeast part of the county, immediately southeast of Amarillo.

Dixon Creek Oil & Refining Co. has asked for an injunction to restrain the Railroad Commission from enforcing proration regulations against its wells in the Gray County area of the district, filing the suit in the Federal district court. Judge James C. Wilson set a hearing for October 14.

The company has a daily potential production of 2,400 bbls. and is permitted to produce 600 bbls. per day under proration, while its refinery, which has a 3,000-bbl. capacity, is shut down for lack of crude, according to company officials.

COMPLETIONS IN WEST TEXAS

Jones County

Ungren & Frazier's No. 2 King, dry and abandoned, total depth 2,105 feet. Transcontinental Production Co.'s No. 1 Rus, abandoned location.

Taylor County

Dunnigan and others' No. 2 Hunter, top pay 2,377 feet, initial production 30 bbls., total depth 2,397 feet.

Coke County

Mid-Kansas Oil & Gas Co.'s No. 1 Henry, dry and abandoned, total depth 4,007 feet.

Glasscock County

Tribal Oil Co.'s No. 2 Edwards, top pay 2,085 feet, increase 2,102-05 feet, initial production 3,024 bbls. per day pumping, total depth 2,110 feet.

Irion County

Davis and others' No. 1 Suggs, dry and abandoned, total depth 8,287 feet.

Winkler County

Richardson and others' No. 1 Scarborough, top pay 2,841 feet, initial production 960 bbls., total depth 2,875 feet.

COMPLETIONS IN PANHANDLE DISTRICT

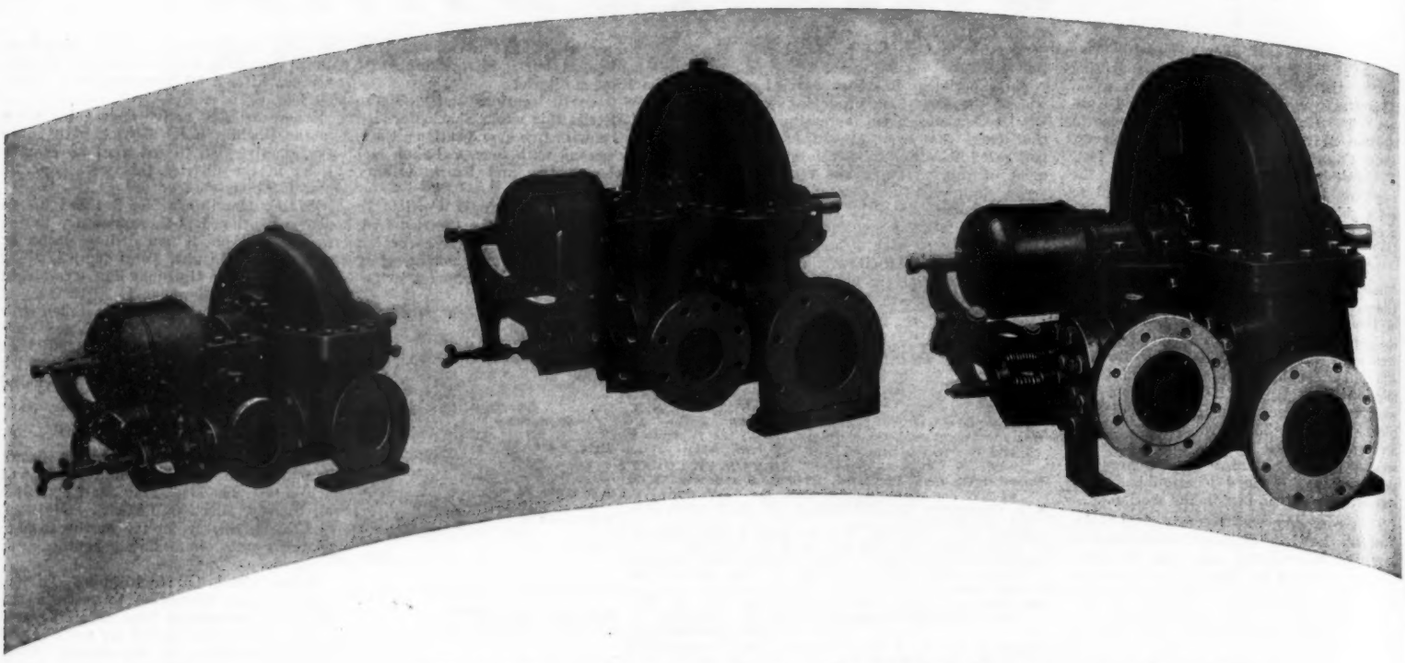
Gray County

The Texas Company's No. 10 Cook-Faulkner, top pay 2,870 feet, initial production 349 bbls. with gas lift, total depth 2,940 feet.

Moore County

Cloud and Dana Oil Co.'s No. 1 Jones (old well deepened), dry and abandoned, total depth 3,688 feet.

Mechanical-Drive



TYPE D-57
Small, single-stage, non-condensing, 5 to 125 hp.

TYPE D-59
Medium, single-stage, non-condensing, 5 to 250 hp.

TYPE D-58
Large, single-stage, non-condensing, 40 to 400 hp.

IF the demands on your boiler plant suddenly increase, will it show signs of getting weary? If so, now is the time to consider how to get maximum power from the steam you generate. With G-E mechanical-drive turbines you can:

1. Provide low-pressure steam where only high-pressure is available.
2. Utilize steam which is now being wasted.
3. Improve the over-all heat-balance condition in your plant.

—and at the same time drive pumps, compressors, fans, pulverizers, or extractors.

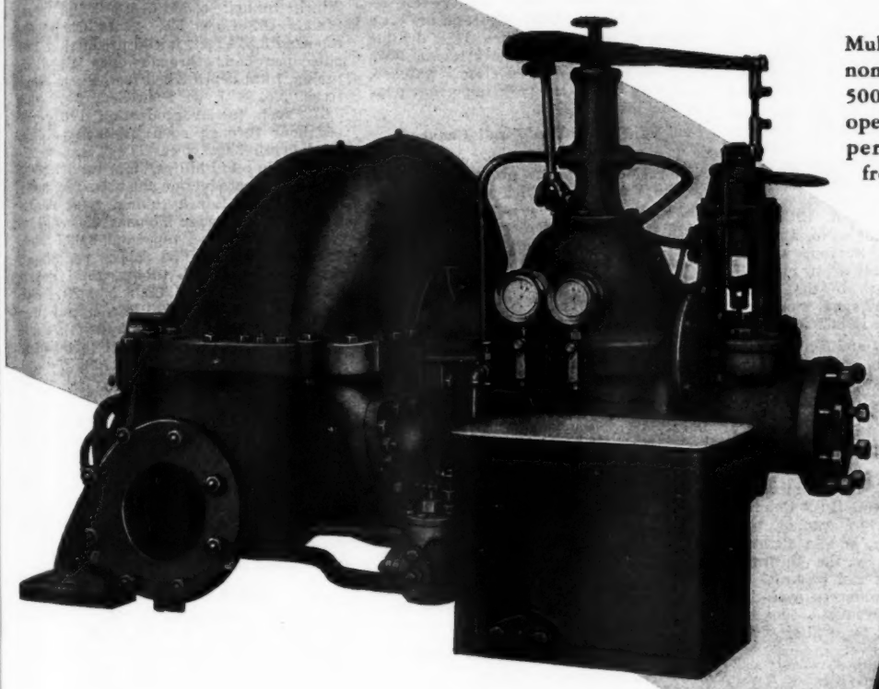
Whatever the need, if a mechanical-drive turbine can be used, there is a G-E turbine which will fit, whether it is for continuous or stand-by service, and whether it is installed indoors or out.

And behind each General Electric turbine stand a national engineering service, a comprehensive knowledge of power-plant problems, a nation-wide warehouse and service-shop organization, and records for turbine performance which are your assurance of economical long-time operation.

Let us send you further information. Just write General Electric, Schenectady, N. Y.

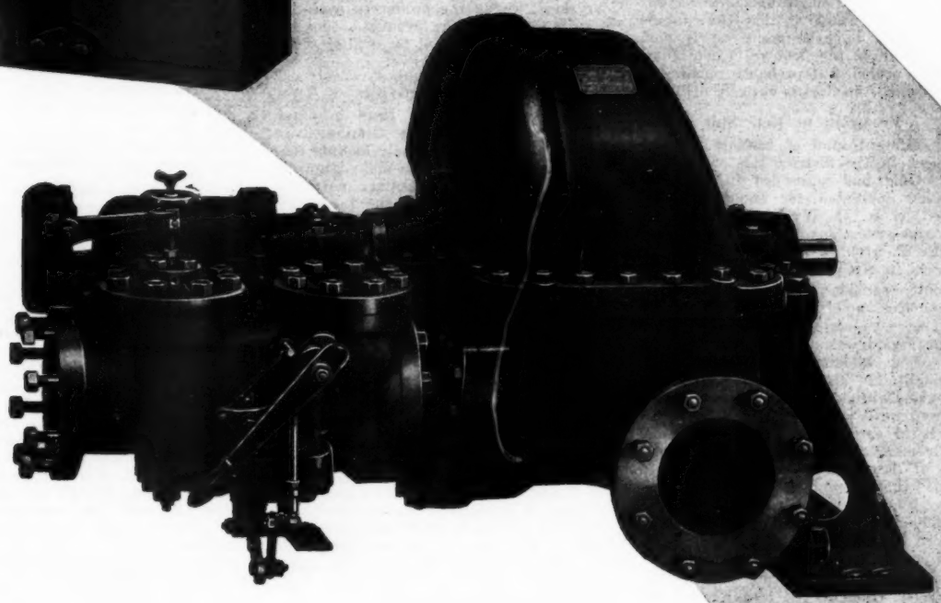
GENERAL

Turbines for TIRED BOILER PLANTS



TYPE D-53
Multistage, condensing or noncondensing, 200 to 500 hp. Equipped with oil-operated governor, which permits speed changes from 25 to 50 per cent

TYPE D-54
Multistage, condensing or noncondensing, 200 to 500 hp.



175-50A

ELECTRIC

Fewer East Texas Locations and Completions; Many Wildcats in Scattered Counties

By L. E. BREDBERG

DALLAS, Tex., Oct. 10.—Locations reached a new low this week, falling to 67, while there were only 83 new wells put on production, also a new low for completions. Locations and completions both have been running more than 100 per week. The Gulf Production Co. and Humble Oil & Refining Co. are the two busiest major producing companies in the field at this time, drilling inside locations to bring their well-per-acre basis to the level of the majority of the operators in the field, one well to every 14.5 acres.

Bottom Hole Pressure Drop

During the hearing at Austin, October 8, E. O. Buck, railroad commission engineer in the East Texas Field, declared that bottom hole pressures had dropped off 14 pounds in the Kilgore area within the past month, which he interpreted as due to excessive allowable in closely drilled areas. At that time the field was allowed to produce a maximum of 375,000 bbls., an increase of 50,000 bbls. per day over the past allowable. The drop in bottom hole pressure is said to be an index to the exhaustion of the reservoir pressure producing the oil, and during that time was about twice the rate which prevailed under the old and lower allowable.

The East Texas pipe line committee met in Austin on October 7 to discuss pipe line connections to unconnected wells in the field, which at that time totaled almost 300, but the many newly completed wells in the field are a continuous problem which will probably remain unsolved until the field is entirely drilled.

Proration in New Suit

A different kind of lawsuit was announced in the district this week after Jack Gold had succeeded in having a receiver appointed for interests represented by R. E. Wyche of Shreveport, La., and others, involving lease on parts of the P. Holmes and W. H. Johnson Surveys in Gregg and Rusk Counties.

Gold's petition charged that Wyche was disposing of a one-fourth of the first seven-eighths of the oil which the plaintiff said was due him in consideration of an assignment he made to the defendant. He also cited in his petition that the Railroad Commission had closed the well until October 10 in order to allow it to catch up with its allowable, which made it appear as if proration laws of Texas had been violated. Gold claimed that keeping the well closed seriously jeopardized its value because of rapid encroachment of salt water on the western edge of the field where it is located.

This is the first civil suit on record to seek relief from alleged illegal taking of oil from an East Texas well in violation of proration orders.

Judge Reuben A. Hall in the Seventy-First District Court appointed James R. Curtis, Longview, as receiver for the well, giving the local attorney full leeway in operation of the well under surveillance of the court.

This case may set a precedent in the district, other interested parties possibly bringing like suits to prevent illegal production of wells in which they are interested. At least it will be closely followed by many operators, lease owners and royalty owners.

Production and Distribution

For the week ending October 7 daily average production in the field was 394,130 bbls., while distribution was 400,840 bbls.

There were four dry holes drilled on edge leases and abandoned this week. The Humble Oil & Refining Co. abandoned its No. 1 J. P. Owens in the D. Meredith Survey, north Gregg County, at 3,719 feet, after topping the Georgetown lime at 3,710 feet. The Sheron Petroleum Co. cored salt water sand in its No. 1-A E. Toole test in the De Los Santos Coy Survey, Cherokee County, from 3,740-42 feet, abandoning it at the latter depth. Russell Petroleum Co.'s No. 1-B A. A. King, in the J. Bradshaw Survey, south Gregg, was abandoned at a total depth of 3,766 feet. A. B. Gepper and others abandoned their No. 1 Bailey in the James Morris Survey, western Gregg County, at a total depth of 3,715 feet after plugging back to that depth from 3,717 feet. Top of sand was cored at 3,696 feet. Elevation is 362 feet.

Robert's No. 1 J. S. and F. Elder in the Mary Van Winkle Survey, on the east side of the Kilgore area, Gregg County, was completed for a small well this week, pumping only 9 bbls. per hour from sand topped at 3,542 feet. Total depth is 3,585 feet and elevation is 356 feet.

None of the seven dry gas producers in the south end of the field, Rusk County, has connections, therefore cannot produce their gas equitably, and so all have been ordered shut in by the Railroad Commission until outlet can be provided for them, giving the producers equitable distribution for their product. Some of the gas is being utilized for drilling other leases in the Joiner area.

Wildcatting Activities

One crop of wildcat tests in East Texas has been just about eliminated as dry holes, checking off likely looking territory as nonproductive in many counties as far south as Leon County north to the Red River, and from the Louisiana line as far west as Dallas County. But still more locations have been made, rigs are moving in on some locations, while on others drilling has commenced, and wildcatting bids fair to hold its own, with the possibility of opening more producing area in one of the many counties now receiving attention by drilling crews.

Counties on the northern end of the Balcones fault zone are now witnessing a play and gaining in interest as more tests are being put down, or preparing to drill, regardless of several dry holes having been drilled in this area heretofore. Kaufman, Rains, Hunt, Hopkins, Wood and Franklin are the counties most active from a wildcatting standpoint.

Several new tests were mentioned last week, and several more were reported this week. Parriott and others have made location for their No. 1 Harvey on the east edge of Wood County. It is near the center of the north line of the M. H. Ussery Survey, approximately 12 miles south and east of Winnsboro. They are to drill three tests.

Prince's No. 1 Ferguson is another test for the west edge of Franklin County. It is in the southwest corner of the Rogers Survey, approximately 4,100 feet north of the test now drilling by Harper and others on fee land.

P. L. Meaders has staked location for No. 1 T. C. Coleman in the W. G. Gibbard Survey, Kaufman County, and Grover Hart has a derrick up on his Walcott & Lott lease in the B. A. Russell Survey, Morris County.

Gardner and others' test northwest of the Van Field, Van Zandt County, is now drilling below 4,300 feet after coring base of the Austin chalk at 4,225 feet. This appears as a dry hole at this writing.

Shell Petroleum Corp. and Penn Oil Co.'s interesting Leon County test on their Centerville block also appears as a failure at the present time. It is drilling at 5,150 feet in the Austin series. Both of these tests have been closely watched, and were two of the most important tests in the district.

Van Field, Van Zandt County

The Railroad Commission has refused application to change proration methods in the Van Field, which is now producing on the sand thickness basis, but it is understood that another petition would be circulated, and a suit filed against the commission and operating companies. The brief order issued by the commission stated that evidence of necessity for change was insufficient. The case was heard in Fort Worth September 24 by two members of the commission.

Two more wells were given small shots this week to increase their flow. Tidal Oil Co.'s No. 7 Castleberry in the Sanchez Survey was shot with four quarts and Jones & Delaney's No. 1 E. M. Bramlette in the same survey was given 20 quarts. Both wells are on the east edge of the field, in the Georgetown lime area, consequently could be shot without endangering surrounding area from salt water encroachment. Shooting is not permitted on the western edge of the field in the salt water area, and but few wells have been given shots to increase their production.

COMPLETIONS IN EAST TEXAS

Cherokee County

Sheron Petroleum Co.'s No. 1-A Eddie Toole (formerly Patton-Oliver Murray), cored salt water sand 3,740-42 feet, abandoned, total depth 3,742 feet.

North Gregg County

Atlantic Oil Production Co.'s No. 11 Duncan, top sand 3,598 feet, initial production 65 bbls. per hour through tapered tubing, total depth 3,661 feet. Galvez Oil Co.'s No. 3 M. O. Sheppard, top sand 3,542 feet, initial production 75 bbls. per hour through three-quarter inch tubing choke, total depth 3,560 feet. Hartwell & Geisler's No. 1 Fee, top sand 3,636 feet, initial production 35 bbls. in 20 minutes through open tubing, total depth 3,643 feet. Gulf Production Co.'s No. 21 M. O. Sheppard, top sand 3,475 feet, initial production 90 bbls. per hour through three-quarter inch tubing choke, total depth 3,500 feet. A. R. Hancock's No. 1 Brawley, top sand 3,488 feet, initial production 38 bbls. in one-quarter hour through 2-inch open tubing, total depth 3,512 feet.

Humble Oil & Refining Co.'s No. 7 Boles, top sand 3,598 feet, initial production 24 bbls. in one-quarter hour through three-quarter inch tubing choke, total depth 3,649 feet; No. 1 J. P. Owens, top Georgetown lime 3,710 feet, dry and abandoned, total depth 3,719 feet, D. Meredith Survey. Inland Oil Co.'s No. 2-B M. Finn, top sand 3,606 feet, initial production 150 bbls. per hour through open 2-inch tubing, total depth 3,654 feet. Island Oil Co.'s No. 2 J. W. Akin, top sand 3,527 feet, initial production 40 bbls. in one-quarter hour through open 2-inch tubing, total depth 3,657 feet. Kewanee Oil & Gas Co.'s No. 12 Fee, top sand 3,611 feet, initial production 25 bbls. in one-quarter hour through 1-inch tubing choke, total depth 3,647 feet. J. F. Lucey, receiver's No. 12 Fee, top sand 3,611 feet, initial production 40 bbls. in one-quarter hour through open 2-inch tubing, total depth 3,560 feet.

Selby Oil & Gas Co.'s No. 5 A. Miller, top sand 3,547 feet, initial production 23 bbls. in one-quarter hour through open 2-inch tubing, total depth 3,595 feet. Simms Oil Co.'s No. 4 A. Christian, top sand 3,564 feet, initial production 180 bbls. per hour through open 2½-inch tubing, total depth 3,583 feet. Simms and Russ' No. 8 J. J. Flewellen, top sand 3,678 feet, initial production 140 bbls. per hour through open 2½-inch tubing, total depth 3,688 feet. The Texas Company's No. 4 Phillips, top sand 3,641 feet, initial production 90 bbls. per hour through open 2-inch tubing, total depth 3,648 feet. Chapman Thomas and others' No. 1 J. H. Gage, top sand 3,625 feet, initial production 83 bbls. per hour through open 2-inch tubing, total depth 3,642 feet. Tidal Oil Co.'s No. 20 Lake Devernia, top sand 3,490 feet, initial production 21 bbls. in 10 minutes through 2-inch open tubing, total depth 3,530 feet.

Dr. E. L. Walker's No. 1 Fee, top sand 3,593 feet, initial production 46 bbls. in one-half hour through open 2 inch tubing, total depth 3,610 feet. Yount Lee Oil Co.'s No. 4 Annie Lee, top sand 3,580 feet, initial production 60 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,600 feet; No. 6-C M. Smith, top sand 3,522 feet, initial production 75 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,542 feet.

South Gregg County

Angle & Kuykendall's No. 1 John Curnigan, top sand 3,712 feet, initial production 73 bbls. per hour through three-quarter inch tubing choke, total depth 3,717 feet. Atlantic Oil Production Co.'s No. 8-A Andrews, top sand 3,575 feet, initial production 65 bbls. per hour through open tapered tubing, total depth 3,596 feet. Blue Star Oil Co.'s No. 6-A Sabine River Tract No. 6, top sand 3,527 feet, initial production 75 bbls. per hour through three-quarter inch tubing choke, total depth 3,537 feet; No. 7-J Sabine River Tract No. 7, top sand 3,482 feet, initial production 40 bbls. in one-quarter hour through open tubing, total depth 3,502 feet; No. 7-K Sabine River Tract No. 7, top sand 3,482 feet, initial production 40 bbls. in one-quarter hour through open tubing, total depth 3,500 feet.

Gulf Production Co.'s No. 15 G. Brown, top sand 3,528 feet, initial production 85 bbls. per hour through three-quarter inch tubing choke, total depth 3,547 feet; No. 3 S. B. Hall, top sand 3,646 feet, initial production 70 bbls. per hour through three-quarter inch tubing choke, total depth 3,654 feet; No. 4 Nichols, top sand 3,690 feet, initial production 43 bbls. per hour through three-quarter inch tubing choke, total depth 3,697 feet. Hensley & Dutton's No. 1 L. Howard, top sand 3,523 feet, initial production 120 bbls. per hour through open casing, total depth 3,548 feet. Jones & O'Brien's No. 8 Hughey-Ross, top sand 3,541 feet, initial production 75 bbls. per hour through 1-inch tubing choke, total depth 3,583 feet. William C. Holcomb's (formerly Knox and others) No. 1 S. Smith, top sand 3,653 feet, initial production 75 bbls. per hour through three-quarter inch tubing choke, total depth 3,684 feet.

Navarro Oil Co.'s No. 4 Green, top

sand 3,545 feet, initial production 45 bbls. per hour through 1-inch tubing choke, total depth 3,576 feet. Pelican Natural Gas Co.'s No. 6 A. Spear and Laird, top sand 3,618 feet, initial production 75 bbls. per hour through three-quarters inch tubing choke, total depth 3,632 feet. Porter and Badgett's No. 1 School Lot, top sand 3,733 feet, initial production 75 bbls. per hour through three-quarters inch tubing choke, total depth 3735 feet. Rhoads Drilling Co.'s No. 3 Sabine River, top sand 3,518 feet initial production 50 bbls. in one-half hour through open tubing, total depth 3,552 feet. J. J. Roberts' No. 1 J. S. and F. Elder, top sand 3,542 feet, initial production 9 bbls. per hour pumping, total depth 3,583 feet. Russell Petroleum Co.'s No. 1-B A. A. King, top sand 3,763 feet, dry and abandoned, total depth 3,766 feet, J. Bradshaw Survey.

Shell Petroleum Corp.'s No. 3 M. J. Register, top sand 3,649 feet, initial production 15 bbls. in one-half hour through open tubing, total depth 3,660 feet. Sinclair Prairie Oil Co.'s No. 32 M. T. Cole, top sand 3561 feet, initial production 25 bbls. per hour through open tubing, total depth 3,593 feet; No. 7 John Elder, top sand 3,517 feet, initial production 35 bbls. in 10 minutes through open tubing, total depth 3,541 feet; No. 10 J. E. Lawther, top sand 3,541 feet, initial production 60 bbls. per hour through open tubing, total depth 3,583 feet.

North Rusk County

East Texas Refining Co.'s No. 3 Andy Givens, top sand 3,622 feet, initial production 46 bbls. per hour through three-quarters inch tubing choke, total depth 3,640 feet. Humble Oil & Refining Co.'s No. 4 W. D. Peterson, top sand 3,590 feet, initial production 48 bbls. per hour through three-quarters inch tubing choke, total depth 3,690 feet. Jackson and others' No. 2 M. D. Williams, top sand 3,680 feet, initial production 46 bbls. in 50 minutes through 2-inch tubing, total depth 3,682 feet. Magnolia Petroleum Co.'s No. 4 N. Bean, top sand 3,502 feet, initial production 22 bbls. per hour through 1-inch tubing choke, total depth 3,549 feet. Murray Oil Co.'s No. 1 V. H. Barton, top sand 3,734 feet, initial production 75 bbls. per hour through open tubing, total depth 3,750 feet.

South Rusk County

Amerada Petroleum Corp.'s No. 15 Stovall, top sand 3,606 feet, initial production 54 bbls. per hour through three-quarters inch tubing choke, total depth 3639 feet. Ebony Oil Co.'s No. 4 Deason, top sand 3,642 feet, initial production 25 bbls. in one-half hour through open 2-inch tubing, total depth 3,700 feet. Gulf Production Co.'s No. 4 W. P. Keeling, top sand 3,706 feet, initial production 90 bbls. per hour through open tubing, total depth 3,748 feet. H. H. Howell's No. 2 Gus Johnson, top sand 3,825 feet, initial production 90 bbls. per hour through open 2-inch tubing, total depth 3,826 feet.

Humble Oil & Refining Co.'s No. 4 Lula Barton, top sand 3751 feet, initial production 33 bbls. in one-half hour through three-quarters inch tubing choke, total depth 3,772 feet; No. 4 Sol Dennis, top sand 3754 feet, initial production 70 bbls. per hour through three-quarters inch tubing choke, total depth 3,788 feet; No. 8 Charles Pilgreen, top sand 3,698 feet, initial production 32 bbls. in one-half hour through three-quarters inch tubing choke, total depth 3,794 feet; No. B-8 R. E. L. Silvey, top sand 3,617 feet, initial production 10 bbls. per hour through three-quarters inch tubing choke, total depth 3,727 feet. Lucey Petroleum Co.'s No. 3-B Maxwell, top sand 3,658 feet, initial production 46 bbls. per hour through 1-inch tubing choke, total depth 3,685 feet.

Merrick Drilling Co.'s No. 2 Neil Cooper, top sand 3,579 feet, initial production 18 bbls. per hour through open tubing, total depth 3,616 feet. Mid-Kansas Oil & Gas Co.'s No. 42 M. M. Cross, top sand 3,615 feet, initial production 96 bbls. per hour through 2-inch lead, total depth 3,638 feet; No. 7 M. G. DeQuerin, top sand 3,608 feet, initial production 64 bbls. per hour on 2-inch lead, total depth 3,664 feet; No. 2 Kangerga, top sand 3,609 feet, initial production 96 bbls. per hour on 2-inch lead, total depth 3,622 feet. Perry-Wood and Boller's No. 5 E. Thrash, top sand 3,637 feet, initial production 75 bbls. in one-quarter hour through 2½-inch tubing, total depth 3,692 feet. Pointer & Duncan's No. 1 Hale, top sand 3,643 feet, initial production 30 bbls. per hour through open 2-inch tubing, total depth 3,745 feet. George Ray's No. 4 Pinkston, top sand 3,598 feet, initial production 50 bbls. in one-half hour through open 2-inch tubing, total depth 3,630 feet.

Sinclair Prairie Oil Co.'s No. 9-B Peter Tipps, top sand 3,622 feet, initial production 26 bbls. in one-quarter hour through open 2½-inch tubing, total depth 3,628 feet. Stanolind and Pure Oil Co.'s No. 34 W. H. Siler, top sand 3,640 feet, initial production 46 bbls. in one-half hour through open 2½-inch tubing, total depth 3,648 feet. Stoddard & Delaney's No. 3 Pinkston, top sand 3,624 feet, initial production 45 bbls. in one-half hour through open 2-inch tubing, total depth 3,655 feet. Summitt Drilling Co.'s No. 8 Mayfield, top sand 3,727 feet, initial production 30 bbls. in one-half hour through open 2-inch tubing, total depth 3,737 feet.

The Texas Company's No. 2 W. Henry, top sand 3,646 feet, initial production 52 bbls. per hour through open tubing, total depth 3,658 feet; No. 7 Allen Kersh, top sand 3,628 feet, initial production 80 bbls. per hour through open tubing, total depth 3,638 feet. Tidal Oil Co.'s No. 6 J. M. Shaw, top sand 3,700 feet, initial production 25 bbls. in one-quarter hour through open 2-inch tubing, total depth 3,718 feet. Venerable & McClanahan's No. 10 Bridwell, top sand 3,609 feet, initial production 45 bbls. in one-half hour through 2½-inch tubing, total depth 3,647 feet.

Smith County

Arcadia Refining Co.'s No. 6-A Green, top sand 3,716 feet, initial production 37 bbls. in 1¼ hours through open 2½-inch tubing, total depth 3,729 feet. Graham Brothers' No. 1 S. S. Cooke, top sand 3,759 feet, initial production 120 bbls. per hour through open 2-inch tubing, total depth 3,761 feet. W. B. Hinton's No. 7 Mayfield, top sand 3,759 feet, initial production 60 bbls. per hour through 2-inch tubing choke, total depth 3,761 feet. Humble Oil & Refining Co.'s No. 6 M. C. Thompson, top sand 3,615 feet, initial production 35 bbls. in one-half hour through three-quarter inch tubing choke, total depth 3,620 feet. K.O.T. Oil Co.'s No. 4 S. S. Cooke, top sand 3,757 feet, initial production 50 bbls. in 10 minutes through open 2½-inch tubing, total depth 3,759 feet. Sinclair Prairie Oil Co.'s No. 6 Amanda Wiley, top sand 3,783 feet, initial production 100 bbls. per hour through open 2½-inch tubing, total depth 3,783 feet.

Virgo Oil Co.'s No. 1 Green, top sand 3,803 feet, initial production 50 bbls. in one-half hour through open 2-inch tubing, total depth 3,803 feet. J. S. Wheelis' No. 7 J. J. Smith, top sand 3,712 feet, initial production 60 bbls. per hour through three-quarter inch tubing choke, total depth 3,714 feet. Zion Oil Co.'s No. 1-A J. Wilson, top sand 3,833 feet, initial production 100 bbls. per hour through open 2-inch tubing, total depth 3,839 feet.

Upshur County

Humble Oil & Refining Co.'s No. 15 J. K. Edwards, top sand 3,591 feet, initial production 95 bbls. per hour through three-quarter inch tubing choke, total depth 3,643 feet; No. 4 A. J. Watkins, top sand 3,679 feet, initial production 53 bbls. per hour through three-quarter inch tubing choke, total depth 3,690 feet. T. H. McKinley's No. 1 Brawley, initial production 40 bbls. per hour through open 2-inch tubing, total depth 3,727 feet.

Van Pool—Van Zandt County

Pure Oil Co.'s No. 5 D. R. Howell, initial production 212 bbls. first 24-hour gauge after choked for proration, total depth 2,955 feet; No. 6 L. M. Brawner, initial production 252 bbls. first 24-hour gauge after choked for proration, total depth 2,962 feet; No. 4 A. F. Magers, initial production 72 bbls. first 24-hour gauge after choked for proration, total depth 2,939 feet; No. 3 J. J. Taylor, initial production 200 bbls. first 24-hour gauge after choked for proration, total depth 2,956 feet; No. 3 W. H. Morris, initial production 40 bbls. first 24-hour gauge after choked for proration, total depth 2,986 feet.

East Central Texas Wildcats

Week Ending October 10

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks:
Roeser and Pendleton's No. 1 M. A. Davy, 660 ft. from N line and center of E and W lines of tract and survey, P. G. Adams Sur.	Moved location.
C. R. Wilmuth et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in S½ of 129-ac. tract, M. Main Sur.	T.D. 1,538 ft.

ANGELINA COUNTY

W. J. Chandler's No. 1 L. J. Dearman, 350 ft. from S and W lines of 20-ac. tract, J. T. Peavy Sur.	Drlg. 300 ft.
Hurlburt et al's No. 1 Long Bell Lumber Co., 160 ft. N and 200 ft. W of SE cor. of survey, H.T.&B. Sur.	Drlg. 2,510 ft.

BOWIE COUNTY

Roy Anderson's No. 1 Dykes, 2 miles W of Texarkana, M. Dykes Sur.	Coring 2,700 ft.
Burnham-Robertson and Greer's No. 1 F. O. Weiss, 850 ft. from N line and 200 ft. from W line of B. H. Williams 50-ac. tract, Jessie Dean Sur.	T.D. 3,861 ft.; S.D.

CHEROKEE COUNTY

Barkley Tate et al's No. 1 H. E. Neal, 330 ft. from N and W lines of tract, J. M. Prosella Sur.	Derrick.
Bridges and Candler's No. 1 Berryman, center of Berryman tract, H. Kimble Sur.	S.D. 1,000 ft.
Davis et al's No. 2 Annie Kelly, 631 ft. W of No. 1, M. De Los Santos Coy Sur.	Derrick.
Mid-Kansas Oil & Gas Co.'s No. 5 H. D. Kelley, 330 ft. from N line and 1,982 ft. from E line of lease, M. D. L. S. Coy Sur.	Waiting on cmt. 3,635 ft.
Mid-Kansas Oil & Gas Co.'s No. 7 H. D. Kelley, 330 ft. from N and W lines of lease, M. D. L. S. Coy Sur.	Derrick.
Pure Oil Co.'s No. 1 W. B. Nicholson, 300 ft. from S and E lines of 72-ac. tract, R. Stewart Sur.	Coring 4,188 ft.
Wilson & Stubbs' No. 1 L. Robert, 450 ft. from S and 150 ft. from W line of lease, J. B. Wolfin Sur.	S.D. 3,600 ft.

DELTA COUNTY

Commerce Oil Co.'s No. 1 Ablowich, 150 ft. from S line and 776 ft. from W line of H. D. Jewett 52-ac. tract, E. Chick Sur.	S.D. 3,813 ft.
Joiner et al's No. 1 Blackwell, 800 ft. S and 150 ft. from E lines of 275-ac. tract, Dunnetelle Sur.	S.D. 3,310 ft.

ELLIS COUNTY

Armstrong's No. 1 Milton Cook, SE cor. of 50-ac. tract, S. Frederick Sur.	S.D. 375 ft. (corrected).
Armstrong Bros.' No. 1 Reeves	S.D. 300 ft.
Armstrong Bros.' No. 1 John Lee Winn, 1,650 ft. from E and 150 ft. from S of Orland, Orlo Wheeler Sur.	S.D. 1,435 ft.
Clark Brooks' No. 1 Anderson, SE cor. of 3,900-ac. tract, 10 miles SW of Wachatchie, E. C. Branch Sur.	S.D. 1,050 ft.
Paris Oil Co.'s No. 1 O. S. Bain, 1,500 ft. from S line and 300 ft. from W line of 60-ac. lease, R. M. Williams Sur.	Drlg. 949 ft.

FRANKLIN COUNTY

Tom Harper's No. 1 fee, 150 ft. from N line and 200 ft. from E line of 116-ac. tr., W. M. Dawson Sur.	Waiting on cmt. to set 3,330 ft.
Fred Price et al's No. 1 Mattie E. Ferguson, 150 ft. from S and W lines of tract and survey, Z. Rogers Sur.	Rig up.

FREESTONE COUNTY

Clyde Creighton's No. 1 Holley Bros., 854 ft. from W line and center of N and S lines of lease, A.B.M. Sur.	S.D. 3,669 ft.

GREGG COUNTY

Arkansas Fuel Oil Co.'s No. 1 E. Killingsworth, 330 ft. from N and W lines of lease, William Robinson Sur.	Location
W. E. Barker et al's No. 1 Richey, 122 ft. from N line and center of E and W lines of lease, William Carlton Sur.	Drlg. 750 ft.
Blue Star Oil Co.'s No. 3-H Sabine River, 1,650 ft. NW up river from E line of Tract No. 3, State Lands Sur.	Top sand 3,515 ft.; T.D. 3,529 ft.
D. F. Buffington's No. 1 S. L. Dansby, 150 ft. from S line and 1,700 ft. from E line of 30-ac. lease, W. P. Chisum Sur.	Drlg. 2,600 ft.
Cap Rock Oil & Gas Co.'s No. 1 Mrs. N. Crane, center of 1.84-ac. tract, M. V. Winkle Sur.	Drlg. 3,560 ft.
Carroll and Blaine's No. 1 A. King, 200 ft. E of No. 1 S. King, M. V. Winkle Sur.	Testing 3,504 ft.
C. M. Cope's No. 1 Doctor Crane, 50 ft. out of NW cor. of S half of Blk. No. 139, M. V. Winkle Sur.	Drlg. 2,800 ft.
Corbin et al's No. 1 A. H. Tubbs, 330 ft. from S and W lines of 50-ac. lease, D. Sanches Sur.	Drlg. 3,598 ft.
Delta Drilling Co.'s No. 2 Hughey-Ross, N offset to Hall's No. 1 Dixon, J. Hillard Sur.	Derrick.
Dorian and Broadman's No. 1 Rudder, 103 ft. N and 55 ft. W of most southerly SW cor. of Stanolind's Persons lease, W. H. Castleberry Sur.	Drlg. plug; T.D. 3,609 ft.

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ROCKY MOUNTAIN RUNS

Average daily pipe line runs from fields in the Rocky Mountain territory for the week ending October 8 follow:

	Bbls.
WYOMING	
Salt Creek	20,700
Big Muddy	1,810
Badger Basin	40
Byron-Garland	990
Dallas-Derby	470
Dutton Creek	80
Ferris	20
Frannie	160
Grass Creek	1,110
Hamilton Dome	860
Hudson	350
LaBarge	890
Lance Creek	110
Lost Soldier	2,360
Midway	120
Oregon Basin	290
Osage	1,050
Pilot Butte	30
Rock River	980
Poison Spider	80
Teapot	30
Total Wyoming	32,530
MONTANA	
Buckley-Border	620
Cat Creek	840
Cut Bank	70
Dry Creek	680
Kevin-Sunburst	4,130
Lake Basin	30
Pondera	820
Total Montana	7,190
COLORADO	
Florence	240
Fort Collins and Wellington	750
Iles Dome	580
Moffat	700
Orchard	210
Rangely	80
Tow Creek	240
Total Colorado	2,800
NEW MEXICO	
Artesia	496
Caprock	579
Hogback	420
Jal	1,085
Rattlesnake	700
Table Mesa	75
Eunice	539
Hobbs	25,004
Lea	2,265
Texas-Pacific	78
Total New Mexico	31,241
Total Rocky Mountain area	73,761
Total previous week	72,197
Difference	1,564

Improvement in Sentiment in the Chicago Markets

(Continued from Page 22)

seller is still able to offer the trade a price of a quarter of a cent under the low in the Chicago district, Indianapolis district and St. Louis district, to mention only the districts for which unimpeachable evidence is available. This practice has been more effective in demoralizing the gasoline tank car markets than any talk of lower crude oil postings or of any number of service station and tank wagon slashes in the territory. Here is the fly in the ointment while everything else totals better conditions. The prices ruling Monday are expected to undergo upward revision before the week is out unless cataclysmic developments thwart the present prospects. On Monday U. S. Motor had eased down an eighth of a cent to 3½ and 3¾ cents. Similar adjustments were made down the line as follows: 60-62 400 endpoint, 3⅝ to 3⅞ cents; 64-66 375 endpoint, 4⅜ to 4⅝ cents; 68-70 360 endpoint, 4½ to 4¾ cents. There is still little call for the 375 and 360 endpoint gasolines, and little more for the 400 endpoint material. Blending operations are probably responsible in a large measure for the lack of activity, and as the cooler season progresses it is expected that the higher test gasolines will suffer from the competition of the blended motor fuels.

Naphtha Tank Car Markets

Except in the blending naphthas there is no change this week in the postings for the special cuts. The low octane naphthas moved down an eighth of a cent with the gasolines, while some producers advanced the prices slightly on the high octane materials.

Kerosene Tank Car Markets

The kerosene tank car markets occupied a stronger position this week both in response to better demand and pressure from the crowding distillates. Prices were up an eighth of a cent on the 41-43 and 42-44 grades.

Distillates and Fuel Oils

Distillates and fuel oils continue to feature in the Chicago district refined and residual petroleum products markets. There is still some trouble on the tank wagon end with two or more major refiners unwilling to concede justification for higher retail prices, but on the tank car end the developments are entirely favorable with important sellers withdrawn from the open markets. The most noticeable advance was registered in the 28-30 zero fuel oil markets, the price moving up to a range of 85 to 95 cents a barrel, Group 3. Shell advanced the 26-28 zero fuel 5 cents to 75 cents. The 38-40 light straw is reported scarce at 3 to 3⅛ cents, and prices quoted on other distillates were 2⅞ to 3 cents on the straw 38-40, and 2⅝ to 2¾ cents on the 32-36 straw. Industrial 32-36 gas oil continues its advance with the prices Monday ranging from 1⅝ to 1⅞ cents. The 22-26 zero fuel is quoted at 60 to 65 cents; 18-22 is up to 47½ and 52½ cents. Below 18 is up 5 cents.

New Type Equipment Uses Compressed Air or Gas

(Continued from Page 10)

shut down, leaving the supply and return lines undisturbed, and the operation of the other pumps would not be affected.

Advantages of Cylinder Pumping

With the possibility of not exceeding the actual power requirements of the wells and varying the compressor station from time to time to suit changing conditions on the lease it has been estimated that this type of pumping equipment will cost less to install than some other types which require overpowered units to meet the possible load requirements of the individual wells rather than the loads actually encountered.

The power being directly applied at any well can be varied to suit the condition at the particular well and in this way each well on the lease is pumped under most favorable conditions which should result in reduction of overall pumping costs.

By dynamometer tests on heavy pumping wells it is indicated that the stress on the sucker rods is less with the pneumatic pumping cylinders than with the usual type of pumping equipment. Sucker rod breakage has been reduced because of the evenly applied power to the upstroke of the piston and the cushioning effect of the compressed air in the lower part of the cylinder on the downstroke.

By pumping several wells from a central compressor plant an economy can be effected and each well pumped at best efficiency or cut out as required.

Well power requirements are in proportion to the fluid capacity of the well. A decline in fluid or production will permit the removal or shutting down of compressors with a reduction of expense. Under conditions of proration, pumping investment can be reduced, with possibility of later increasing pumping capacity by installing additional compressors.

The speed of operation is governed by the maximum and minimum speed at which the working barrel can be operated. A straight lift on the polish rod assures less wear on packing in stuffing box at the well. The pumping cylinder is suspended in the derrick which eliminates the need of additional foundations for the pumping unit and the need of counterbalancing is also cut out.

Performance in Field

The Pure Oil Co. has had a number of these units in operation for some time on its leases in the Oilton Field, Oklahoma, and has had very satisfactory results. It has been particularly noticeable that the number of sucker rod failures has been reduced, and general maintenance costs have been low. Air consumption per barrel of oil daily produced has actually been less than the amount originally calculated as necessary to pump these wells.

Various tests were made to determine the limitations of the unit in previous installations and certain features incorporated in early installations were corrected with the result that the installations in the Oilton Field are reported as working very satisfactorily.

The costs of the installation with the auxiliary equipment compare favorably with other types of pumping equipment and practically all of the pneumatic pumping cylinder systems can be salvaged and moved from well to well as needed.

Fourth Gas Well in the Hebron Field, Two More Are Due for Completion

By SPECIAL CORRESPONDENT

WELLSBORO, Pa., Oct. 8.—The Hebron Pool in Potter County has four gas wells, and a test 5 miles from the discovery well on the Booth farm, is being closely watched as it will be the next completion in the field. The latest gasser was the Hungiville Oil & Gas Co.'s No. 2 Booth, which was completed in the Oriskany sand and started off at the rate of 7,500,000 feet of gas per day. The next well expected is that of the Hammondsport Oil & Gas Co. on the Gale farm, 5 miles northeast of the Booth farm. Little information has come from the company concerning this well, but from outside sources it is learned that the hole is over 5,000 feet deep. It was expected the Oriskany sand would be found in a few days.

The important deep test of the Allegheny Gas Co. on land of the Emporium Lumber Co. in the East Fork district, Potter County, was last reported drilling at 6,313 feet with a 75,000-foot gas showing.

J. B. Reed and others are below 3,500 feet on the Champlin farm. Keefer and others were running pipe at 5,273 feet in No. 1 Clair. Other Potter County wells that are interesting the talent include Updegraff and others' No. 1 Coyle, which is drilling below 3,100 feet; Potter Development Co.'s No. 1 Carpenter, which was last reported at 4,055 feet, and the Wyoga Gas Co.'s No. 2 Tassell drilling at 2,650 feet.

G. K. Rodgers and others, in their No. 1 E. N. Clair, in Hebron Township, were drilling at 5,250 feet and were expecting results with every tip of the beam.

In Tioga County, where no new gas wells have been completed in recent weeks, the Penn United Co. was drilling at 2,065 feet on the Lawrenceville Bank property in Lawrence Township, and the York Penn Co. was below 2,100 feet on the Preston farm. Tioga Gas Co.'s No. 1 Cloos was drilling at 3,775 feet. The Mutual Natural Gas Co. was setting liner at 3,765 feet on the Murray farm.

Over on the New York side of the big Oriskany sand gas area Brendell and others were drilling below 1,200 feet in No. 1 Seldon, in Allen Township, Allegany County. The Charles Ivers interests were drilling below 2,300 feet in No. 1 Fenner Eddy on the Alpine anticline in Steuben County. In Ontario County, Crandall and others were drilling below 650 feet in No. 1 Simpson, near Geneva. The discovery well in that area, recently drilled, found gas pay at 1,085 feet and the well started at 5,000,000 feet of gas per day.

The Corning Glass Works has started drilling its test on the Callahan farm, 5 miles north of Corning and had reached a depth of 650 feet.

Overtine and others were shut down at 2,555 feet on the Mitchell farm, near Troy, Bradford County, Pennsylvania.

Gamco Group will drill a test gas well on the A. J. Stage property, Lawrence Township, Tioga County, Pennsylvania.

It is expected that operations will be started October 15 by George A. Manning, of this city, who is interested in the project and is a trustee for the group.

Eastern Market Stabilized by Drastic Price Slash

(Continued from Page 23)

of the refineries. There were no price changes reported on neutral oils last week.

Gulf Export Market

The only activity reported at the Gulf during the week involved the reported closing of a cargo of East Texas crude for export at 96 cents per barrel f.o.b. Gulf. The cargo, for October shipment to France, is to run between 9,000 and 12,000 tons, and the extremely low price indicates that the sale represents the clearance of a distressed supply of crude.

As a result of recent sharp price advances, foreign buyers have withdrawn their inquiry for a cargo of stabilized casinghead gasoline, which had come into the market during the previous week. It is not indicated whether the cargo will be placed elsewhere, or whether the buyers plan to come back into the U. S. Gulf market when prices become more to their liking.

Prices for gasoline and kerosene at the Gulf remained in nominal position throughout the week. Thus far, Rumanian export prices have not shown the expected advances as a result of the recent compact entered into by Rumanian producers and refiners, and it is not thought that the U. S. Gulf market can make any progress toward higher ground until f.o.b. Constanza quotations move up.

California reports during the week stated that the Japanese navy had closed contracts for 420,000 bbls. of Kettleman Hills high gravity crude at an average price of $1.14 per barrel, with shipments to start immediately. Union Oil Co. booked 280,000 bbls. of this business and Standard Oil Co. of California the remainder. The purchase came as a surprise in view of reports from Japan and Russia during the past fortnight indicating that the Japanese navy had closed substantial contracts for oil with the Soviet oil trust and was planning to supplant American oil with Russian petroleum for the bulk of its future requirements.

Petroleum Exports

Routine activity continued to feature the export market locally during the past week, and the volume of new business reported during the period did not run into large totals. Inquiries continued confined principally to small quantities for prompt and nearby delivery.

The following table shows exports of principal refined petroleum products from New York for the past four weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Oct. 1	Sept. 24	Sept. 17
Gasoline	70,000	95,000	5,000
Naphtha	300,000	295,000	3,150,000
Kerosene	60,000	17,000	126,000
Fuel and gas oil	12,000	10,000	190,000
Lubricating oil	718,000	650,000	625,000
Petroleum, ref'd.	230,000	210,000	140,000
	Pounds		
Petrolatum	16,000	.....	35,000
Paraffin wax	1,125,000	775,000	2,385,000
Refined	226,000	470,000	190,000
Scale	.....	27,000	98,000
Lub. grease	615,000	910,000	786,000

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended October 1 totaled 373,000 bbls., a daily average of 53,286 bbls., compared with a daily average of 135,857 bbls. for the previous week and a daily average of 93,679 bbls. for the four weeks ended October 1. Details follow:

At—	Bbls. of 42 gals.
Boston	66,000
New York	227,000
Others	80,000
Total	373,000
Daily average	53,286
Daily average four weeks	93,679

All of the imports during the week ended October 1 consisted of fuel oil.

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic ports during the week ended October 1 totaled 237,000 bbls., a daily average of 33,857 bbls., compared with a daily average of 40,286 bbls. for the previous week and a daily average of 25,321 bbls. for the four weeks ended October 1. There were no receipts of California oil at the Gulf during the week. All of the week's receipts at Atlantic ports consisted of gasoline, Baltimore receiving 45,000 bbls., New York 75,000 bbls. and Philadelphia 117,000 bbls.

As a result of the sharp price declines in refinery gasoline markets on the Atlantic Seaboard recently, it is expected that motor fuel shipping schedules on the part of California refiners who have been moving gasoline eastward will be sharply curtailed, and that little additional Pacific Coast motor fuel will find its way eastward until the position of the market here, from the price standpoint, shows definite improvements. With high octane gasoline available to tank car contract buyers at 5½ cents per gallon, f.o.b. terminals, at a number of principal Atlantic Coast ports, there is little or no margin available on California gasoline which might be shipped to these points to be sold in competition with the local product. It is considered likely, on the other hand, that California may ship kerosene and furnace oil to the Atlantic Seaboard in larger volume over the remainder of the year, due to the relatively favorable market for these products in the East.

OPENS HOUSTON OFFICE

HOUSTON, Tex., Oct. 10.—Apex Construction Co., pipe line contracting firm, with headquarters at Tulsa, has just opened a branch office here. Laurence Favrot, president of the company, will be directly in charge of the new office, located in the Second National Bank Building.

Some Additional Softening in Coastal Fuel Market

HOUSTON, Tex., Oct. 11.—Additional softening of quotations on bulk fuel oil was reflected in Gulf Coast refinery markets the past week. Material from several sources now is being quoted as low as 45 cents or 15 cents below the posted bunker market. Despite the import tax there still is some movement of foreign oil to the Atlantic Seaboard at prices below the laid down market of coastal oil and coastal sellers have had to meet those figures. Demand for coastal fuel has been confined to routine outlets with little spot business being done.

No important change was indicated in other coastal refined products. Reports of concessions being offered on lubricating oils from some sources were heard but sellers here have not openly made cuts in prices generally quoted. Sellers generally are of the opinion that no important new business will materialize by cutting of prices at this time.

Higher octane gasolines for domestic movement continued fairly steady in price although not in great spot demand. These grades were being held for a minimum of 5¼ cents. Lower octane material also showed no change in quotations but these were largely nominal from 4½ to 5 cents.

Kerosenes and gas oils showed continued firmness and still were scarce.

Work on River Crossings Begun on Iraq Pipe Line

The Iraq Petroleum Co. commenced work on the laying of pipe across the Tigris and Euphrates Rivers on September 15. The 12-inch pipe to be used for this purpose was shipped from England in June to Basra. All the 10¾-inch and 12-inch pipe from England will be shipped to Basra and that to be delivered by America, France and Germany will be sent to Haifa and Tripoli.

This work marks the first step in the actual laying of this pipe line. H. S. Austin, who is in charge of pipe line construction, has arrived in Haifa, and will be in Iraq for several weeks to see the laying of the line across the Tigris and Euphrates Rivers started. The use of ferries over these rivers will be feasible during the forthcoming season, but in order to transport the vast amount of material during the flood period the Iraq Petroleum Co. has decided to erect cableways. These will be between towers 140 and 130 feet in height, with intervening spans of 1,985 feet in the case of the Tigris River and 1,830 feet over the Euphrates River.

The next important step arranged is for the erection of the telephone and telegraph line, which is scheduled to start on November 1. For this purpose 26,350 poles of one-piece high tensile weldless steel have been manufactured in Wales.

East Central Texas Wildcats

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Doctor Duncan's No. 2 Duncan, 200 ft. from S line and 308 ft. from W line of lease, G. F. Penn Sur. ..... Testing 3,575 ft.
East Texas Oil Co.'s No. 2 J. W. Fuller, 350 ft. from S line and 200 ft. from E line of 22-ac. lease, D. Sanches Sur. ..... Rig up.
East-Whaley Oil Co.'s No. 1 Elder, 60 ft. from N line and 100 ft. from E line of Blk. No. 19, M. V. Winkle Sur. ..... Drlg. 3,150 ft.
Fair and Thompson's No. 2 D. Carr, 330 ft. from N line and 990 ft. from W line of lease, M. McCurry Sur. .... Swabbing; T.D. 3,482 ft.
Lewis Godlin's No. 1 E. L. Walker, 330 ft. N of road, 330 ft. from E line of 80.2-ac. tract, M. Dillard Sur... Derrick.
Guinn Petroleum Co.'s No. 1 J. S. and F. Elder, 200 ft. NE of Solar's No. 1 Elder, and 450 ft. SE of Martin's No. 1 Elder, M. V. Winkle Sur. ..... Derrick.
Hall et al's No. 1 C. Dickson, 330 ft. from N and W lines of lease and 330 ft. S and E of NE cor. of Simples' lease, James Hillard Sur. ..... Swabbing; T.D. 3,587 ft.
A. R. Hancock's No. 2 L. H. Brawley, 550 ft. E of No. 1 P. McAnnelly Sur. ..... Derrick.
S. J. Jordan's No. 1 E. L. Walker, 660 ft. W of SE cor. of lease and 165 ft. from S line and 155 ft. from river, E. A. Lambert Sur. ..... S.D. 3,592 ft.
F. W. Lee's No. 1 School Lot, 167 ft. N of J. C. Vernon's No. 1 Cemetery, T. Johnson Sur. ..... Waiting on cmt. to set 3,724 ft.
Lechner and Hubbard's No. 1 N. Tuttle, 37 ft. from N and S line and 275 ft. from W line and 225 ft. from E line of .8-ac. tract, W. H. Castleberry Sur.... Waiting on cmt. to set 3,533 ft.
Lester and Duffield's No. 1 J. Moore, 330 ft. from W line of lease and 660 ft. S of Shell's No. 18 Moore, F. W. Johnson Sur. ..... Drlg. 3,560 ft.
Lewis et al's No. 1 R. M. Woods, 2,200 ft. N and 375 ft. E of SW cor. of survey, H. R. Hokit Sur. ..... S.D. 888 ft.
Madalyn Oil Co.'s No. 1 J. V. Rossen, 550 ft. N and S and 100 ft. E and W of tract, T. Johnson Sur. ..... Rig up.
McBride et al's No. 1 Tubbs, 330 ft. from N line and center of E and W lines of 6-ac. lease, D. Sanches Sur. ..... Derrick.
C. C. McCormick's No. 1 S. Key, 1,000 ft. from S line of survey and 100 ft. from W line of survey, L. J. Rigsby Sur. ..... Drlg. 2,956 ft.
Newman et al's No. 1 O. Prothro, 330 ft. from E line of lease and center of N and S line of 8.5-ac. tract, J. Blair Sur. ..... Set surface csg.
J. B. Patty et al's No. 1 Farrell, 330 ft. S and 175 ft. W of NE cor. of E 50 acres of 148-ac. tract, D. Sanches Sur. ..... Derrick.
R. A. Payne et al's No. 1 R. M. Woods, 20 ft. from S line and 31 ft. from W line of 2.13-ac. lease, H. R. Hokit Sur. ..... Testing; T.D. 3,633 ft.
Pennsylvania Oil & Gas Co.'s No. 2 T. B. Harris, 330 ft. from S line and 150 ft. from W line of 20-ac. lease, J. Ruddle Sur. ..... S.D. 3,515 ft.
Producers Investment Co.'s No. 1 King, 20 ft. from N line and 125 ft. from W line of Blk. No. 117, M. V. Winkle Sur. ..... Derrick.
Raddatz' No. 4 Sabine River, Tract No. 3, 300 ft. W and 100 ft. S of SE cor. of Shell's Stitchcomb lease ..... Bldg. rig.
Rhodes Drilling Co.'s No. 1 Sabine River, Tract No. 4, 330 ft. from W line of lease and NE of Imperator's No. 1 Southworth ..... Digging pits.
Rhodes Drlg. Co.'s No. 4 Sabine River, Tract No. 4, 280 ft. N of The Texas Company's No. 6 Cole, State Lands Sur. ..... Drlg. 2,700 ft.
Rhodes Drlg. Co.'s No. 1 Sabine River, Tract No. 5, 366 ft. due east of Sun's No. 4 Cole, State Lands Sur. ..... Rig up.
Rhodes Drlg. Co.'s No. 1 Sabine River, 330 ft. from E line and 378 ft. NW of Sinclair Prairie's No. 8-B A. A. King, Tract No. 1, State Lands Sur. ..... Rig up.
Russell Petroleum Co.'s No. 2 M. T. Cole, 330 ft. from N and E lines of lease, J. Duncan Sur. ..... Drlg. 2,580 ft.
Ruston Drlg. Co.'s No. 1 Sabine River, Tract No. 3, 330 ft. from E line of lease and 50 ft. N of S bank of river, State Lands Sur. ..... Rig up.
Ruston Drilling Co.'s No. 2 Sabine River, Tract No. 3, 660 ft. W of No. 1 ..... Driving piling.
South Gulf Production Co.'s No. 1 Cemetery, 225 ft. NW of Barnsdall's No. 1 McGrede, on one-half acre lease, D. Sanches Sur. ..... S.D. 200 ft.
J. B. Sowell's No. 2 W. P. Luce, 378 ft. W of No. 1, E. L. Walker Sur. ..... Skidded derrick.
W. C. Turnbow's No. 2 McKinley, 125 ft. N and 420 ft. E of NE cor. of Yount Lee's Harley lease, D. Sanches Sur. ..... Derrick.

HENDERSON COUNTY

B. L. Green et al's No. 1 M. H. Gussett (old well drilled deeper), 150 ft. from N line and 1,000 ft. from W line of 105.5-ac. tract, 3 miles SW of Mabank, L. D. Stover Sur. ..... Coring 3,200 ft.
Dr. J. T. Kennon et al's No. 1 Rowe & Baker, 1,320 ft. from N line and 150 ft. from W line of survey and tract, Josiah T. Childress Sur. ..... S.D. 920 ft.
H. H. Meyer's No. 1 M. E. Olson, 2 miles S of Brownsboro tract in NW cor. of survey, George Wilson Sur. ..... Drlg. 3,240 ft.

HILL COUNTY

F. J. Spikes' No. 1 M. H. Davis, 150 ft. from S and E lines of 55-ac. tract, H. R. Alexander Sur. ..... S.D. 1,319 ft.

HOPKINS COUNTY

Burgess and Sinson's No. 1 First Natl. Bank, 470 ft. N and W of SE cor. D. Buie Sur., but located in the H.E.P.&P.R.R. Sur. ..... Rig up.
Columbia Oil & Gas Co.'s No. 1 McCloud, 150 ft. from S line and 200 ft. from E line of lease, Holbrook Sur., elev. 485 ft. ..... S.D. 500 ft.
Roark et al's No. 1 Taylor, 220 ft. from N and W lines of 80-ac. tract, in the John Polk Sur. ..... S.D. 540 ft.

HUNT COUNTY

A. Kelsey et al's No. 1 W. R. Berry, 450 ft. from S line and 300 ft. from E line of 139-ac. tract, J. Roads Sur. ..... Location.

KAUFMAN COUNTY

George Anderson's No. 1 W. N. Moody, 1,980 ft. S, 45 deg. E and 660 ft. S, 45 deg. W of NW cor. of survey, George Helder Sur. ..... Drlg. 3,248 ft.
P. L. Meader's No. 1 T. C. Coleman, 673 ft. from S line and 460 ft. from W line of 259-ac. tract, W. G. Gibbard Sur. ..... Moving in.

LAMAR COUNTY

G. W. Davy et al's No. 1 McGustion, 450 ft. from S line, 450 ft. from W line of farm and survey, Galet Wood Sur. ..... Temp. abnd. 3,466 ft.
Doyle and Jondeau's No. 1 Martin, 990 ft. from N line and 330 ft. from E line of tract, Joseph Deck Sur. ..... Rig up; T.D. 2,446 ft.

LEON COUNTY

Alladay et al's No. 1 W. R. Thompson, 330 ft. from N line of survey and 330 ft. from E line of 98-ac. tract, N. M. Allen Sur. ..... S.D. 690 ft.
Shell-Penn & Black's No. 1 W. M. Phillips .. .. Drlg. 5,126 ft.

MORRIS COUNTY

Grover Hart's No. 1 Walcott and Lott, 250 ft. from N line and 330 ft. from E line of survey, 3 miles S of Carson, B. A. Russell Sur. ..... Derrick.
Joiner & Harris Drilling Co.'s No. 1 Clayton Brown, 1,625 ft. N of most easterly SW cor. of survey, William M. Coffey Sur. ..... Derrick.
Leonard's (Tucker-Fullwood) No. 1 P. M. Staggers, 450 ft. from N line and 150 ft. from E line of 65.5-ac. tract, J. D. Nelson Sur. ..... T.D. 3,656 ft.

POLK COUNTY

Cannon et al's No. 1 Roberts, 10 miles N of Livinston, Romera Sur. ..... Rig up and shut down.

RAINS COUNTY

Harris et al's No. 1 Markovitz, 660 ft. from N and E lines of 106-ac. tract, 2 miles SE of Emory, Charles Velpoler Sur. ..... Drlg. 3,825 ft.

RED RIVER COUNTY

Concord Oil Co.'s No. 1 J. R. Dallahunty, 500 ft. from N of Isaac Moore Sur. and 300 ft. E of E line of Robert Glass Sur. ..... S.D. 2,573 ft.

ROCKWALL COUNTY

Bucanner Oil Co.'s No. 1 H. L. Lofland, center of 69-ac. tract in W. M. Bird Sur. ..... Set 10-in. csg. 130 ft.

RUSK COUNTY

Barnsdall Oil Co.'s No. 1 Gill, 330 ft. from N and E lines of lease, R. W. Smith Sur. ..... Drlg. 2,570 ft.
Barnsdall Oil Co.'s No. 2 Gill, 302 ft. from N line and 330 ft. from W line of lease, R. W. Smith Sur. .... Location.
Boggs et al's No. 1 J. Border, 280 ft. S of Wyche's No. 1 Arnold on 5-ac. lease, P. W. Holmes Sur. ..... T.D. 3,690 ft.
Brooks Petroleum Co.'s No. 1 Mayfield, Daniel Clark Sur. ..... Top sand 3,623 ft.; waiting on standard rig; would not flow; T.D. 3,702 ft.
T. E. Castle's No. 1 R. H. Gary estate, 3,960 ft. from N line and 5,280 ft. from W line of survey, 10 miles S of Henderson, A. Latham Sur. ..... Fishing 3,812 ft.
J. Guinn's No. 1 Neal Cooper, center of Blk. No. 36, T. J. Moore Sur. ..... Waiting on standard rig; T.D 3,660 ft.
Gulf Production Co.'s No. 6 Sexton Estate, midway between Nos. 4 and 5, M. McCabe Sur. ..... Waiting on cmt. to set 3,614 ft.
Fred Hanbury's No. 2 M. L. Thompson, 266 ft. from N and E lines of 10-ac. lease, M. J. Pru Sur. ..... Drlg. 3,570 ft.
Harris and Russell's No. 1 T. W. Harris, 330 ft. from S line and 660 ft. from W line of most southerly SW cor. of 160-ac. tract, 3 miles SW of Henderson, W. G. Davis Sur. ..... Derrick.
Hasting and Dodson's No. 1 E. B. S. Florey, 257 ft. from S line and 287 ft. from E line of 25-ac. lease, P. W. Holmes Sur. ..... Drlg. 2,615 ft.
Hathaway et al's No. 1 Gray, J. M. McLain Sur. ..... S.D. 3,640 ft.
Helden-Rodgerson et al's No. 1 Barton and Birdwell, N offset to Reisinger et al's No. 1 Barton, W. G. Tutt Sur. ..... T.D. 3,792 ft.
Humble Oil & Refining Co.'s No. 1 Amanda Simmons, 330 ft. from most northerly N line and 323 ft. from W line of 32.5-ac. lease, W. H. Bears Sur. ..... Drlg. 1,716 ft.
J. Jeagens' No. 1 Needham, 330 ft. from N line of lease and 330 ft. from NE and 400 ft. from SE of survey, J. H. Chambers Sur. ..... Reaming out 1,414 ft.
Joy McCartney's No. 1 Deason, 150 ft. from S and W lines of lease, Juan Ximenes Sur. ..... Drlg. 2,900 ft.
Paulett et al's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ..... S.D. 1,465 ft.
W. F. Reynolds' No. 1 H. Stoddard, 330 ft. from S line of road, 220 ft. from N line of lease, and 330 ft. from W line of Creek, Juan Ximenes Sur. ..... S.D. 3,630 ft.
Selby Oil & Gas Co. and Lewis Petroleum Co.'s No. 2 W. D. Peterson, 277 ft. S and 378 ft. W of NE cor. of Gulf's Eaton lease, Mary Cogswell Sur. ..... Derrick.
Ross Seward's No. 1 Burton, J. J. Y'Barbo Sur. ..... T.D. 3,387 ft.
Fred Shields and Florence Oil Co.'s No. 1 R. L. Buckner, 330 ft. from N and W lines of 320-ac. tract and survey, John E. Davis Sur. ..... Rig up.
Smith and Sikes' No. 1 Frederick, 150 ft. S of SE cor. of E. D. Oil Co.'s Alford lease, I. G. Parker Sur. .... Drlg. 3,518 ft.
Stewart and Duffy's No. 1 Solar Jackson, 330 ft. from N and E lines of lease, P. W. Holmes Sur. ..... Derrick.
Trapshooter Reilly's No. 2 M. L. Thompson, 330 ft. from E line and center of N and S lines of 10-ac. lease, M. J. Pru Sur. ..... Rig up.
William Travis' No. 1 J. F. Horton, 330 ft. S and E of NW cor. of lease, J. C. Barnett Sur. ..... Derrick.
R. H. Vise's No. 2 W. D. Alford, 330 ft. from S line and 990 ft. from E line of 164-ac. tract, H. B. Dance Sur. ..... Drlg. 2,740 ft.
Karl Witt et al's No. 1 H. B. Leverett, 140 ft. from S line and 110 ft. from W line of 2.5-ac lease, J. Lindley Sur. ..... Drlg. 3,000 ft.

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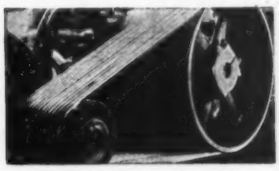

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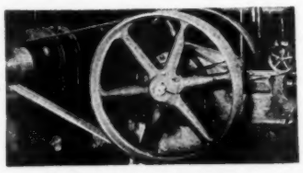

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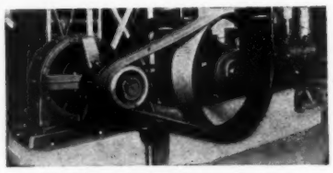

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V-23

WORTHINGTON

Clint Wood Drilling Co.'s No. 2 Scroggins, 330 ft. from S line and center of E and W lines of lease, W. A. Elliott Sur. ..... Drlg. 3,100 ft.

SMITH COUNTY

Cockburn and Hooker's No. 2 Lula Jackson, 330 ft. from S and E lines of 76-ac. lease, E. Daniels Sur. .. Rig up and S.D.
Golden Eagle Oil Co.'s No. 1 T. B. Collier, 137 ft. from S line and 150 ft. from E line of lease, J. Jordan Sur. ..... Derrick.
Golden Eagle Oil Co.'s No. 1 E. E. Moore, 330 ft. from N and E lines of 8-ac. lease, Juan Vargus Sur. .... Derrick.
Golden Eagle Oil Co.'s No. 1 L. S. Sartain, center of 5-ac. lease, J. Jordan Sur. ..... Top sand 3,847 ft.; T.D. 3,850 ft.; prepare to deepen.

Hooper et al's No. 1 Lula Jackson, 330 ft. S and 530 ft. E of most northerly SW cor. of Monroe Shell Robinson lease, E. Daniels Sur. ..... S.D. 3,815 ft.
Humble Oil & Refining Co.'s No. 7 M. C. Thompson, 330 ft. from N and W lines of lease, I. Moore Sur. ..... Drlg. 802 ft.
Joiner et al's No. 1 C. S. Jackson ..... T.D. 4,045 ft.; S.D.; prepare to abnd.

Alex McCutchin's No. 1 Jessie Cole, 108 ft. from S line and 110 ft. from E line of 1.27-ac. lease, J. Jordan Sur. ..... Derrick.
McRable et al's No. 1 C. P. Hamilton, 330 ft. from S and E lines of 255-ac. tract, Jackson Rector Sur. .... Rig up and S.D.
Mundt et al's No. 1 W. E. Murray, 330 ft. from S and E lines of lease, 5 miles SE of Tyler, Marshall Wynn Sur. ..... Drlg. 3,786 ft.
Pugh and Hickman's No. 4 S. S. Cooke, 330 ft. from S line and 150 ft. from W line of lease, James Jordan Sur. ..... Rig up.
Rabe et al's No. 1 Bateman, 333 ft. from S line and 275 ft. from E line of 15-ac. lease, James Jordan Sur. ..... Set csg.; T.D. 3,794 ft.
Sun Oil Co.'s No. 1 Mattie Burns, 330 ft. from S and E lines of lease, Juan Vargus Sur. ..... Spudding.
Sun Oil Co.'s No. 13 O. W. Knight, 1,640 ft. from S line and 2,000 ft. from E line of lease, D. Collins Sur. ..... Location.
The Texas Company's No. 6-B Jarvis, 2,310 ft. S and 330 ft. E of NW cor. of lease, M. D. L. S. Coy Sur. ..... Location.
Aiph Tillman et al's No. 1 Jessie Cole, 137 ft. from E line and 275 ft. from N line of 32-ac. lease, center of 5-ac. lease, James Jordan Sur. ..... Waiting on cmt. to set; T. D 3,761 ft.

Virgo Oil Co.'s No. 1 Carson, 355 ft. from N line and center of E and W lines of 4.85-ac. lease, B. W. Campbell Sur. ..... Prepare to test; T.D. 3,805 ft.
Weaver et al's No. 3 T. O. Wright, 150 ft. from W line and center of N and S lines of 12-ac. lease, Juan Vargus Sur. ..... Drlg. 3,610 ft.
G. K. West's No. 2 Sartain, 330 ft. from S and W line of lease, J. Jordan Sur. ..... Drlg. 2,895 ft.

TITUS COUNTY

Perry V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ..... T.D. 4,212 ft.

UPSHUR COUNTY

J. P. Evans et al's No. 1 Bell, 700 ft. from N line and 900 ft. from E line of 60-ac. lease, William Fadden Sur. ..... Waiting on cmt. to set 126 ft.
Everette Oil Co.'s No. 4 A. J. Sanders, 330 ft. from S and W lines of lease, T. Allen Sur. ..... Derrick.
Lewis Godlin's No. 2 J. T. Mackey, 660 ft. SW of No. 1 and 330 ft. NW of highway ..... Rig up.
Pat Hudson et al's No. 1 D. F. Smith, 330 ft. out of SE cor. of W 100 acres of the N 200 acres of the 272-ac. lease, 3 miles E and 1½ miles N of Cranfill & Reynolds' No. 1 Rash, John Denson Sur. ..... Waiting orders 3,710 ft
J. E. Mabee et al's No. 3 Whitehurst, 330 ft. from N and W line of lease, McKinley and Williams Sur.... Derrick.
Ransom and Sheppard's No. 1 Stiles, 330 ft. from S line and center of E and W lines of 3½-ac. lease, William King Sur. ..... Waiting on cmt. to set; T.D. 3,754 ft.
Scott & Ashford's No. 1 Duphrates, 772 ft. from N line and 2,805 ft. from E line of lease, Del Torres Sur. ... Drlg. 4,001 ft.
M. L. Stevens et al's No. 1 J. Hargroves, 330 ft. from S line and center of E and W lines of lease, M. Mann Sur. ..... Rig up.
The Texas Company's No. 2 Williams, 330 ft. from S and E lines of survey, J. Crouch Sur. ..... Location.
Turnbow's No. 1 D. C. Shelton, center of 2½-ac. tract, Wm. King Sur. ..... Derrick.
Twin Oil Co.'s No. 2 C. J. Mackey, 330 ft. from S line of lease and 660 ft. W of No. 1, J. M. Pineda Sur. ..... Rig up.
Wadley and Evans' No. 1 W. S. Jones, 330 ft. from S and E lines of 100-ac. lease, James M. Dunn Sur. .... Coring 3,673 ft.
Watson's (formerly Kinsey) No. 1 D. F. Smith, 466 ft. from S line and 1,165 ft. from E line of 266-ac. tract, J. R. Davis Sur. ..... S.D. 1,856 ft.

VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 325-ac. tract, 3½ miles S of Canton, M. J. McCadena Sur. ..... S.D. 2,405 ft.
Kelly O. & G. Co.'s No. 1 Lemaford, center of Lemaford tract, John Conner Sur. ..... S.D. 2,300 ft.
Lyman et al's No. 1 J. C. Stewart, 150 ft. from N line and 650 ft. from W line of 90-ac. tract, A. McPhail Sur. ..... Derrick.
Pure Oil Co.'s No. 4 C. C. Stewart, 225 ft. N of S line and 225 ft. E of W line of lease, A. McPhail Sur. .... Cmt. setting 2,776 ft.
Pure Oil Co.'s No. 2 Wylie Enas, 150 ft. N of S line and 225 ft. E of W line of lease, J. Prado Sur. ..... Running liner 2,976 ft.
Pure Oil Co.'s No. 3 A. D. Clark, 225 ft. S of N line and 218 ft. W of E line of lease, A. H. Wiley Sur. ... Testing 2,917 ft.
Pure Oil Co.'s No. 2 A. D. Clark, 225 ft. S of N line and 218 ft. E of W line of lease, A. H. Wiley Sur. ..... Testing 2,922 ft
Pure Oil Co.'s No. 3 R. L. Wells, 250 ft. S of N line and 250 ft. E of W line, H. V. Moon Sur. ..... Location.
Pure Oil Co.'s No. 4 A. R. Humphreys, 1,125 ft. W of E line and 225 ft. S of N line of lease, A. McPhail Sur. ..... Location.
A. C. Rowan's No. 1 W. E. Price, 150 ft. from N line and 150 ft. from W line of 28-ac. tract, John Walling Sur. ..... S.D. 2,865 ft.
Roy Stumpff's No. 1 M. I. Riggs, 169 ft. from E line and 250 ft. from S line of tract No. 2 and 330 ft. from E line of lease, 4 miles NE of Van, William Daniel Sur. ..... Rig up and S.D.
The Texas Company's No. 7 R. A. Tunnell, 787 ft. S of N line and 200 ft. W of E line of lease, John Walling Sur. ..... Testing 2,938 ft.
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... T.D. 3,850 ft.
C. O. Weir's No. 1 W. B. Tunnell, 150 ft. from N and W lines of lease, A. H. Wiley Sur. ..... Location.

WOOD COUNTY

De Canther's No. 1 N. L. McLain, 350 ft. from N line and 642 ft. from E line of tract, Sam Brooks Sur.... T.D. 3,835 ft. (corrected).
F. B. Parriott's No. 1 John G. Harvey, 200 ft. from N line and 2,801 ft. from W line of survey, 6 miles E of Quitman, Meredith H. Ussery Sur. ..... Moving in.
W. B. Salisbury's No. 1 T. H. Peters, 600 ft. from S line and 200 ft. from E line of 320-ac. tract and survey, 4 miles E of Mineola, W. B. McNutt Sur..... Rig up.
Talko Oil Co.'s No. 1 G. T. Ross, B. L. Smith Sur. ..... Fishing 3,840 ft.
Wood County Dev. Co.'s No. 1 Davis, approximately 180 ft. from S line of 160-ac. tract and 2½ miles S of Kantes in Sarah McDonald Sur. ..... Drlg. 2,875 ft.

Wildcat Operations in West Texas

(Continued from Page 37)

IRION COUNTY

Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... S.D. 6,519 ft.
Straughn et al's No. 1 Kaiser, 1,930 ft. from N and 1,390 ft. from W, Sec. 69, H. Cooper Sur. ..... Straightening hole 225 ft.

JONES COUNTY

Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 42.4-acre tract in G. Martinez Sur. ..... S.D. 1,005 ft.; temp. abnd.
Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of N half of Sec. 39, Blk. 18, T.&P. Sur. ..... S.D. 1,100 ft.
Pope & Anderson's No. 2 Swann, 3,050 ft. from S and 1,120 ft. from E of I. Miley Sur. ..... Spudded.
Smart & Reynolds' No. 1 Reynolds, 2,500 ft. from N and 150 ft. from W, Sec. 3, W. T. Scott Sur. No. 3.. S.D. 175 ft.
C. S. Spelling et al's No. 1 Lillie, 200 ft. from N and W Sec. 4, E. Miller Sur. No. 2 ..... S.D. 2,030 ft.
Southern Oil Co.'s No. 1 Swann, 1,000 ft. from E and 900 ft. from S of I. Miley Sur. ..... Rig.
Young et al's No. 1 Harrell, 150 ft. from S and E of N half of Sec. 8, O.A.L. Sur. ..... Location

LOVING COUNTY

Adams et al's No. 1 Reagan-McElvain, 2,310 ft. from NW and 1,650 ft. from NE Sec. 84, Blk. 1, W.&N.W. Sur. ..... Material.
Columbia Oil & Gas Co.'s No. 2 Wheat, 2,310 ft. from NW and 330 ft. from SW Sec. 85, Blk. 1, W.&N.W. Sur. ..... T.D. 700 ft.; cmtd. 10-in. csg.
Eppenauer Drlg. Co.'s No. 1 Victor, 2,310 ft. from NE and 330 ft. from SE Sec. 4, Blk. 2, W.&N.W. Sur. ... Drlg. 2,620 ft.
Goldman et al's No. 1 Allen, 330 ft. from NE and NW of Sec. 90, Blk. 1, W.&N.W. Sur. ..... S.D. 3,305 ft
Goldman et al's No. 2 Allen, 330 ft. from NW, 2,310 ft. from SW, Sec. 90, Blk. 1, W.&N.W. Sur. ..... Rigging up.
Goldman et al's No. 1 Reagan-McElvain, 330 ft. from NE, 2,310 ft. from NW, Sec. 84, Blk. 1, W.&N.W. Sur.. Shut down.
Lewis & Slagel's No. 1 Johnson, 330 ft. from N and 1,650 ft. from W, Sec. 6, Blk. 56, Twp. 1, T.&P. Sur... S.D. 2,280 ft.
Martin et al's No. 1 Wheat, 990 ft. from SW and SE, Sec. 83, Blk. 1, W.&N.W. Sur. ..... Drlg. 250 ft.
Miller et al's No. 1 Ferguson, 990 ft. from NE of Sec. 44, Blk. 29 ..... Spudded and S.D
Thomas' No. 1 Wheat, 2,310 ft. from NW, 990 ft. from NE, Sec. 83, Blk. 1, W.&N.W. Sur. ..... Drlg. 3,880 ft.
Trinity Drlg. Co.'s No. 1 Wheat, 2,310 ft. from SW, 330 ft. from SE, Sec. 3, Blk. 2, W.&N.W. Sur. ..... S.D. 1,300 ft

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 133, H.L.R.R. Sur. ..... S.D. 2,866 ft.

PECOS COUNTY

Adams et al's No. 1 Shearer, 1,650 ft. from SE and 330 ft. from NE Sec. 101, Blk. 10 H.&G.N. Sur. ..... T.D. 1,471 ft.; 25 bbls. per day connecting to tanks.
Aero Oil & Gas Co.'s No. 2 Byrne, 2,430 ft. from NW and 1,485 ft. from SW, Sec. 54, Blk. 10, H.&G.N. Sur... Drlg. 65 ft.
Cardinal Oil Co.'s No. 5-F Tippett, 300 ft. E of No. 3-F, Sec. 61, Blk. 194, G.C.&S.F. Sur. ..... Spudded.
Corvette Oil Corp.'s No. 8 H. Monroe, 1,040 ft. from E line and 150 ft. from N line of Sec. 39, G.C.&S.F. Sur., Blk. 194 ..... Location.
Davis et al's No. 1 University, 1,650 ft. from S and 330 ft. from E, Sec. 31, Blk. 16 ..... Cellar.
Hampton et al's No. 1 Byrne, 1,980 ft. from NW and 1,500 ft. from NE, Sec. 54, Blk. 10, H.&G.N. Sur. .... S.D. 1,395 ft.; T.P. 1,856 ft
Kane Prod. Co.'s No. 1 Pecos Valley, 330 ft. from NW and 1,650 ft. from SW, Sec. 34, Blk. 3, H.&T.C. Sur... Location.
Messinger et al's No. 1 Jones, 1,200 ft. from NW, 1,200 ft. from SW, Sec. 5, Blk. 9, H.&G.N. Sur. ..... S.D. 250 ft.

PRESIDIO COUNTY

Sadler et al's No. 1 Bledsoe, 2,640 ft. from N and W Sec. 15, Blk. 354, G.C.&S.F. Sur. ..... S.D. 328 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 7-C University, 1,670 ft. from W and 725 ft. from S, Sec. 25, Blk. 9 ..... T.D. 8,825 ft.; flow increasing.
Big Lake Oil Co.'s No. 8-C University, 710 ft. from S and 2,410 ft. from E, Sec. 12, Blk. 2 ..... Reaming hole 2,711 ft.
Big Lake Oil Co.'s No. 9-C University, 2,410 ft. from N and 765 ft. from E, Sec. 12, Blk. 2 ..... Reaming hole 250 ft.
Big Lake Oil Co.'s No. 181 University, 1,700 ft. from S and 2,000 ft. from W, Sec. 10, Blk. 2 ..... Drlg. 250 ft.
Continental Oil Co.'s No. 6-B University, 765 ft. from N and 1,980 ft. from W, Sec. 36, Blk. 9 ..... Drlg. 2,670 ft.
Group Oil Corp.'s No. 5-B University, 2,700 ft. from S and 1,775 ft. from W, Sec. 36, Blk. 9 ..... S.D. 7,621 ft.

REEVES COUNTY

F. McDorman et al's No. 1 Ray Roberts et al, 2,310 ft. from S and E lines of Sec. 22, Blk. 59, P.S.L. Sur. ... Drlg. 2,025 ft.
Southern Star Oil Co.'s No. 1 Wright, 1,320 ft. from S and W, Sec. 58, Cassel's Sur. ..... S.D. 250 ft

RUNNELS COUNTY

Blue Bonnett Oil Co.'s No. 1 McMillan, 1,384 ft. from N and 660 ft. from W, Sec. 32, N. Travis Sur. ..... T.D. 2,522 ft.; T.P. 2,520 ft.; flowing 80 bbls. daily.
Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Hall Sur. No. 519 ..... S.O. 3,417-20 ft; S.D. 3,600 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... T.D. 5,410 ft.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,302 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... S.D. 5,580 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,320 ft. from N, 1,670 ft. from W, G.H.&S.A. Sur. ..... S.D. 5,053 ft.

SCURRY COUNTY

G. E. Dickman et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, E.&T.C. Sur. ..... S.D. 5,100 ft.
Heinzleman et al's No. 1 Hood, 436 ft. from N and 489 ft. from E, Sec. 87, Blk. 3, H.&T.C. Sur. ..... S.D. 88 ft.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W, Sec. 66, Blk. 3, H.&G.N. Sur. ..... Spudded and S.D.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... S.D. 4,993 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ..... S.D. 2,269 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... S.D. 3,150 ft.; moved off tools.
McPhee-Briggs' No. 1 Kern, 330 ft. from S and W Sec. 15, Blk. D-5, M.-K.-T. Sur. ..... S.D. 300 ft.
Miller Bros.' No. 1 Allison & Burke, C NW Sec. 10, Blk. 176, T.&P. Sur. ..... S.D. 120 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 141, G.C.&S.F. Sur.. S.D. 6,130 ft.
Jones et al's No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... S.D. 2,545 ft.
Sides et al's No. 1 Phelps, 2,157 ft. from N and 2,483 ft. from W, Sec. 5, G. W. Hurley Sur. ..... S.D. 3,525 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 1,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... S.D. 760 ft.; S.O. and gas 725 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur... SD. 1,994 ft
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... S.D. 200 ft.

UPTON COUNTY

Clark-Cooper's No. 1 Lane, 2,310 ft. from N and 990 ft. from E Sec. 36, Blk. 1, M.-K.-T. Sur. ..... Drlg. 1,925 ft.
Hope Pet. Co.'s No. 2 Lane, 2,310 ft. from N, Sec. 36, Blk. 1, M.K.&T. Sur. ..... T.P. 2,200 ft.; drlg. 2,305 ft.; 1,500 ft. oil in hole.
White's No. 1 Lane, 2,310 ft. from S and 990 ft. from E Sec. 36, Blk. 1, M.-K.-T. Sur. ..... S.D. 1,320 ft.

VAL VERDE COUNTY

Couch et al's No. 1 J. P. Yoas, 1,300 ft. from the N line and E line of Sec. 31, Blk. 1 ,I.&G.N. Sur. ..... S.D. 400 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev 2,130 ft. ..... S.D. 6,780 ft.

WARD COUNTY

Abell Bros.' No. 4 Smith, 990 ft. from SE and 285 ft. from NE of C of Sec. 4, Blk. 34, H.&T.C. Sur. ..... Rigging up machine.
Abell Bros.' No. 1 Hayzlett, 1,650 ft. from NW and 1,320 ft. from SW, Sec. 13, Blk. 5, H.&T.C. Sur. ..... Machine.
Atlantic Oil Prod. Co.'s No. 2 Barrow, 1,650 ft. from NE and 330 ft. from NW Sec. 23, Blk. 5, H.&T.C. Sur.... Cleaning out 2,526 ft. after shot.
Barnsdall Oil Co.'s No. 2 Henry, 990 ft. from SE and 330 ft. from NE, Sec. 28, Blk. B-29, P.S.L. Sur..... T.D. 2,521 ft.; waiting on tubing.
Barnsdall Oil Co.'s No. 3 Henry, 330 ft. from NE and 1,650 ft. from SE, Sec. 28, Blk. 29 ..... Location.
Bundy et al's No. 1 Bennett, 2,310 ft. from NW and SW Sec. 16, Blk. 34, H.&T.C. Sur. ..... S.D. 160 ft.
Caprito et al's No. 1 Beatty, 330 ft. from SW and 990 ft. from SE, Sec. 3, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,333 ft.
Eastland Oil Co.'s No. 2 Weiss, 1,091 ft. from SW and 2,365 ft. from SE, Sec. 4, Blk. 34, H.&T.C. Sur. ..... T.P. 2,287 ft.; T.D. 2,388 ft.; cleaning out.
Eastland Oil Co.'s No. 1-A Weiss, 2,364 ft. from SE, 333 ft. from SW, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,375 ft.
Eastland Oil Co.'s No. 2 Green, 2,364 ft. from NW and 330 ft. from SW, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,382 ft.
Eppenauer's No. 1 Purcell, 355 ft. from SW and 1,650 ft. from SE of Sec. 17, Blk. 14, H.&T.C. Sur. ..... T.D. 2,740 ft.
E. V. Greer's No. 1 Carr, 150 ft. from NW and 510 ft. from SW, Sec. 12, Blk. 5, H.&T.C. Sur. ..... S.D. 2,223 ft.
Gulf Prod. Co.'s No. 13 Hutchings, 3,347 ft. from N and 330 ft. from E, Sec. 5, Blk. F ..... Set 10-in. csg. 435 ft.
Kregle et al's No. 1 Heaster, 3,062 ft. from SE, 330 ft. from NE, Sec. 46, Blk. 34, H.&T.C. Sur. ..... Fishing 1,785 ft.
Landreth Prod. Co.'s No. 1 Barker, 330 ft. from NW, 437 ft. from NE, Sec. 27, Blk. B-29, P.S.L. Sur. ... T.P. 2,305 ft.; drlg. 2,420 ft.
Leidecker et al's No. 2 Bennett, 2,310 ft. from NW and 1,650 ft. from NE, Sec. 16, Blk. 34 ..... Drlg. 2,010 ft.
Maxwell's No. 1 Brillhart, 2,310 ft. from NE and SE Sec. 13, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,315 ft.
R. F. Owen's No. 1 Lee, 1,344 ft. from NW and 4,532 ft. from SW, Sec. 1, J. Howe Sur. ..... Drlg. 2,156 ft.
Penn Oil Co.'s No. 1 York, 2,310 ft. from NW and SW Sec. 10, Blk. 34, H.&T.C. Sur. ..... S.D. 2,356 ft.
Penn Oil Co.'s No. 1 Hardage-Wilson, 330 ft. from NE and SE Sec. 11, Blk. 34, H.&T.C. Sur. ..... Rigging up machine.
Rector Oil Co.'s No. 1 Monroe, 660 ft. from NE and SE, Sec. 62, Blk. 33, H.&T.C. Sur. ..... S.D. 2,535 ft.
Renaud-Prettyman's No. 1 University, 330 ft. from N and E Sec. 4, Blk. 16 ..... Plugged back from 2,763 ft to 2,735 ft.; pumping 60 bbls. day.
Richardson's No. 10 O'Brien, 1,897 ft. from N and 990 ft. from W Sec. 5, Blk. F ..... T.D. 2,780 ft.; flowing 150 bbls. per day.
Rixford-Fuglarr's No. 1 London, 660 ft. NW, 330 ft. NE E cor. Sec. 10, Blk. 32, H.&T.C. Sur., but in Sec. 8 ..... S.D. 2,280 ft.; 400 ft. oil in hole: T.P. 2,230 ft.
Stanolind Oil & Gas Co.'s No. 2 Weiss, 330 ft. from SW and 1,810 ft. from SE, Sec. 4, Blk. 34, H.&T.C. Sur. T.D. 2,258 ft.; drlg. plug.
Stanolind Oil & Gas Co.'s No. 3 Weiss, 1,118 ft. from SW and 1,810 ft. from SE Sec. 4, Blk. 34, H.&T.C. Sur. . Fishing 2,160 ft.
Stanolind Oil & Gas Co.'s No. 1 Grimes, 1,485 ft. from NE and 2,112 ft. from SE, Sec. 14, Blk. 34 ..... Derrick.
Sturm et al's No. 3 Jones, 330 ft. from SW and 990 ft. from SE, Sec. 25, Blk. B-29, P.S.L. Sur. ..... Rigging up machine.
T. P. Coal & Oil Co.'s No. 5 James, 330 ft. from NE and 1,810 ft. from SE Sec. 5, Blk. 34, E.&T.C. Sur .. T.D. 960 ft.; to set csg.
Thomas et al's No. 1 Bennett, 2,310 ft. from NE and SE. Sec. 16, Blk. 34. E.&T.C. Sur. ..... S.D. 2,525 ft.
Thompson's No. 1 Johnson, 2,310 ft. from SW and 330 ft. from NW, Sec. 9, Blk. 34, H.&T.C. Sur. ..... Rigging up rotary.
Weekly Oil Corp. and L. E. Hultz' No. 1 Burks, 330 ft. from SE and 1,380 ft. from SW, Sec. 26, Blk. B-29, P.S.L. Sur. ..... 25,000,000 to 30,000,000 ft. gas 2,165 ft.; drlg. 2,220 ft.

WINKLER COUNTY

Richardson et al's Scarborough, 990 ft. from N and W Sec. 1, Blk. 77 ..... Rigging up cable tools.
Richardson et al's No. 1 Scarborough, 990 ft. from N and 1,650 ft. from W, Sec. 1, Blk. 77 ..... Cellar.
Old Richardson et al's No. 2 Sealy estate, 1,650 ft. from S and 330 ft. from W, Sec. 94, Blk. A, G.M.M.B.&A. Sur. ..... Fishing 1,260 ft.
Richardson et al's No. 2 Scarborough, 1,980 ft. from S and 660 ft. from W, Sec. 1, Blk. 77, P.S.L. Sur. ..... Rigged up and S.D.

Wildcat Operations in Texas Panhandle

Week Ending October 10

CARSON COUNTY

Company, well, farm name, section and block— Remarks:

H. A. M. Oil Co.'s No. 3 Cooper, 990 ft. from S, 330 ft. from W of E half NE, Sec. 5, Blk. 9, I.&G.N. Sur..... Bldg. rig.
Osborne's No. 1 Byrum, 330 ft. from N and E, N½ NW, Sec. 188, Blk. 3, I.&G.N. Sur. ..... Cleaning out 3,144 ft.
Sinclair Prairie Oil Co.'s No. 1 Cooper, 330 ft. from S and W. Sec. 4, Blk. 9, I.&G.N. Sur. ..... Bldg. derrick.
Skelly Oil Co.'s No. 20 W. Schaffer, 1,320 ft. from S and E, Sec. 87, Blk. 4, I.&G.N. Sur. ..... Bldg. derrick.
Stubblefield-Shell's No. 3 Cooper, 330 ft. from N and 330 ft. from E of SE, Sec. 5, Blk. 9, I.&G.N. Sur..... Cellar.
Texoma Nat. Gas Co.'s No. 1-T Urbanczyk, center SE, Sec. 25, Blk. 4, I.&G.N. Sur. ..... Spudded.
The Texas Co.'s No. 1 Byrum, 330 ft. from N and W, S half NW, Sec. 188, Blk. 3, I.&G.N. Sur. ..... Drlg. 850 ft.

CHILDRESS COUNTY

Robertson's No. 1 Biddy, center S 26½ acres of N, Laughlin Sur. Blk. T ..... Rig.

COLLINGSWORTH COUNTY

Cochran Bros.' No. 1 Atkinson, 660 ft. from N and E, Sec. 24, Blk. 31, H.&G.N. Sur. ..... Spudded.
Kates et al's No. 1 Hickman, center NE, Sec. 43, Blk. 10, H.&G.N. Sur. ..... Drlg. 1,450 ft.
Kates et al's No. 1 Bell, 200 ft. from N, 2,310 ft. from W, Sec. 21, Blk. 102, H.&G.N. Sur. ..... S.D. 1,340 ft.; elevation 1,910 ft.

COTTLE COUNTY

Darby Pet. Co. et al's No. 1 Puersil, 330 ft. from N, 1,320 ft. from E, Sec. 40, Blk. B, John H. Stevens Sur. ..... Drlg. 3,510 ft.

DEAF SMITH COUNTY

Western Union Oil Co.'s No. 1 Farwell, C NW, Sec. 18-3n-2e ..... S.D. 1,240 ft.

GRAY COUNTY

Back & Barber's No. 1 Back, 660 ft. from S, 330 ft. from W, Sec. 140, Blk. 25, H.&G.N. Sur. ..... S.D. 2,428 ft.
Baldridge et al's No. 1 Melton, 330 ft. from NE E half NE, Sec. 95, Blk. B-2, H.&G.N. Sur. ..... Drlg. 325 ft.
Boyce et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur. ..... S.D. 2,554 ft.; shot 50 qts.; no results.
Dixon Creek Oil Co.'s No. 1 Chapman, 330 ft. from S and W, Sec. 69, Blk. 25, H.&G.N. Sur. ..... T.D. 1,850 ft.; ran 8-in. csg.
Gerber O. & G. Co.'s No. 1 Stubbs, 330 ft. from S, 990 ft. from W, Sec. 9, Blk. 3, B.&B. Sur. ..... Cellar
Graham-Crue Hoover's No. 1 Barrett, 330 ft. from S and W, Sec. 130, Blk. 3, I.&G.N. Sur. ..... T.D. 2,240 ft.; standardizing.
Jewel Oil Co.'s No. 1 Meera, 330 ft. from S and W, NW SW, Sec. 106, Blk. 3, I.&G.N. Sur. ..... S.D. 3,443 ft.
Kewanee O. & G. Co.'s No. 1-F Morse, 330 ft. from S and W, Sec. 3, Blk. 26 ..... Show gas 2,350 ft.; S.D. 2,500 ft.
Magnolia Pet. Co.'s No. 6 Lee, 660 ft. from S and W, Sec. 14, Blk. 3 I.&G.N. Sur. ..... Standardizing 2,778 ft.
Mid-Kansas O. & G. Co.'s No. 2 Webb, 990 ft. from N, 330 ft. from W NE, Sec. 61, Blk. 25, H.&G.N. Sur.... Dig cellar.
Nipper et al's No 1 Morse, 330 ft. from N and E sec. 1, Blk. 26, I.&G.N. Sur. ..... S.D. 2,750 ft.
Nabob Oil Co.'s No. 1-E Morse, 330 ft. from S and W, W½ SE, Sec. 67, Blk 25, H.&G.N. Sur. ..... Plugged back to 2,635 ft.
Parton & Holt's No. 2 Morse, 330 ft. from W, 250 ft. from N, W½ SW, Sec. 5, Blk. 26, H.&G.N. Sur. ..... S.D. 2,635 ft.
Parton Holt's No 3 Morse, 660 ft. from N and E of E half SW, Sec. ., Blk. 26, H.&G.N. Sur. ..... Drlg. 1,930 ft.
Plains Drlg. Co.'s No 1 Thut, 960 ft. from N, 330 ft. from W. Thut Sur. ..... Testing 2,875 ft.; 40 bbls. day.
Pulse-Shell's No 1 Brown, 990 ft. from N, 350 ft. from E of NW. Sec. 128, Blk. 3, I.&G.N. Sur... ..... S.D. 1,970 ft.; ran 8-in. csg.
Richardson No 1 Wright, 330 ft. from S and W, Sec. 12 Blk 3 I.&G.N. Sur ..... Lost returns 2,660 ft.
Sellers et al's No. 2 Sullivan, 823 ft. from W, 231 ft. from N., 160 ft. S, 264 ac. of N½, Sec. 136, Blk. 3, I.&G.N. Sur. ..... Will plug back to 3,375 ft. and shoot.
Skelly Oil Co.'s No. 3 South Jackson, 330 ft. from N, 990 ft. from E, Sec. 88, Blk. B-2 ..... Drlg. 1,870 ft.
Skelly Oil Co.'s No. 6 Saunders, 270 ft. from S, 330 ft. E SW, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... T.D. 2,515 ft.; standardizing.
Skelly Oil Co.'s No. 7 Saunders, 330 ft. from N, 360 ft. from W, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Moving in rig.
Parker's No. 1 Saunders, 330 ft. N and W, Sec. 3, Blk. 1 B.B.&S.F. Sur. ..... Location.
Tedesco-Bell O. & G. Co.'s No. 3 Morse, 330 ft. from N and W N half SE, Sec. 1, Blk. 26, H.&G.N. Sur. .... Bldg. rig.
The Texas Co.'s No. 5 Shaw, 330 ft. from S and E, E half Sec. 5, Blk. 1, A.C.H.&B. Sur. ..... T.D. 300 ft.; lost csg.
The Texas Co.'s No. 1 Pope, 330 ft. from N and E of W half SE, Sec. 173, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,610 ft.
The Texas Co.'s No. 12 Williams, 270 ft. from N, 330 ft. from E of N half NW, Sec. 7, Blk. 1, A.C.H.&B. Sur... Drlg. 2,525 ft.
Tripplehorn Bros.' No. 1 Lovett, 330 ft. from N and W, Sec. 57, Blk. B-2, H.&G.N. Sur. ..... T.D. 3,081 ft.; show oil 3,053 ft.
Travis et al's No. 2-B Webb, 990 ft. from S, 330 ft. from E of NW, Sec. 61, Blk. 25, H.&G.N. Sur. ..... Drlg. 2,140 ft.
Weltzel Oil Co.'s No. 2 Morse, 330 ft. from S and E of N half NW, Sec. 67, Blk. 25, A.&G.N. Sur. ..... Drlg. 1,945 ft

HEMPHILL COUNTY

Hoover's No. 1 Hoover, 350 ft. from N, 1,300 ft. from E, G. S. Hood Sur. ..... S.D. 5,140 ft

HUTCHINSON COUNTY

Baso's No. 1 Moore, 330 ft. from S, 330 ft. from E, in 80 ac. in NW, Sec. 21, Blk. M-21, T.C.R.R. Sur. ..... T.D. 3,080 ft.; estm. 5 or 10 bbls. may plug.
Canadian River Gas Co.'s No. 2-A Dunaway, 330 ft. from N and W, SE, Sec. 5, Blk. Y-2, T.T.R.R. Sur. ..... T.D. 2,150 ft.; standardizing; show gas 1,955 ft.
Danciger O. & R. Co.'s No. 1 Johnson, 330 ft. N and W, SE, Sec. 34, Blk. Y, A.&B. Sur. ..... Spudded and S.D.
Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. ..... S.D. 450 ft.
Holmes & Newblock's No. 2 Moore-Langdon, 330 ft. from N and W, Sec. 125, Blk. 4, I.&G.N. Sur. ..... S.D. for repairs 2,947 ft.
Huber Pet. Co.'s No. 2 Christian, 330 ft. from S and E, SW, Sec. 33, Blk. Y, A.&B. Sur. ..... S.D. 1,425 ft.
Huber Pet. Co.'s No. 1 Moyer-Johnson, 990 ft. from N, 330 ft. from E half SW, Sec. 34, Blk. Y, A.&B. Sur. ..... T.D. 2,190 ft.; pulling big pipe.
Liner Drlg. Co.'s No. 1-D Johnson, 330 ft. from N and E Sec. 6, Blk. 1, B.&R. Sur. ..... Plugged back to 3,146 ft.; S.D
Joe Murphy's No. 1 Watkins, 440 ft. from N and W of N half, Sec. 13, Blk. M-21 ..... Drlg. 710 ft.
Oates & Morrow's No. 2 Starnes, 1,400 ft. from S, 680 ft. from E. Sec. 24, Blk. M-23, T.C.R.R. Sur. ..... S.D. 3,000 ft.
Pharis Oil Co.'s No. 5 Smith, 660 ft. from N and W, SW, Sec. 14, Blk. Y, M.&C. Sur. ..... Shut down.
Stansylvania Oil Co.'s No. 3 Stansbury, 236 ft. from S, 1,264 ft from W, Sec. 129, Blk. Z, E.L.&R.R. Sur.... Drlg. 2,515 ft.
Timms-Deatch's No. 4 Moore, 330 ft. N and W, Sec. 124, Blk. 4, I.&G.N. Sur. ..... Drlg. 2,500 ft.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... T.D. 5,003 ft

MOORE COUNTY

Canadian O. & G. Co.'s No. 2-A N. H. Reed, 200 ft. N of N line, Sec. 20, Blk. B-10, 200 ft. E of E line, Sec. 16, but in Sec. 47, Blk. 3, G.&M. Sur. ..... Location.
Dogie Oil Co.'s No. 1 Greenwald, 330 ft. from N and W, Sec. 277, Blk. 44, H.&T.C. Sur. ..... Rebuilding rig 1,150 ft.
Shamrock Oil & Gas Co.'s No. 2 Brumley, 330 ft. from N and W, Sec. 360, Blk. 44, H.&T.C. Sur. ..... Standardizing 2,772 ft.
Shamrock Oil & Gas Co.'s No. 1 Burnett, 660 ft. from S, 330 ft. from W, Sec. 359, Blk. 44, H.&T.C. Sur. .... T.D. 2,984 ft.; to skid rig 165 ft. north.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton. 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... S.D. 400 ft.
Chambers et al's No. 1 Herring, CNL, Sec. 29, Blk. S, G.C.&S.F. Sur. ..... T.D. 4,000 ft.; fishing pipe.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur. ..... Set 6-in. csg. 4,550 ft.
Travis et al's No. 1 Cunningham, 330 ft. S and W, Sec. 74, Blk. M-2, H.&G.N. Sur. ..... S.D. 2,690 ft

WHEELER COUNTY

Delaney et al's No. 1 Sitter, 330 ft. from S and W of E half NE, Sec. 33, Blk. 24 ..... Derrick.
Devore & Robinson's No. 1 Sitter, 2,310 ft. from S and E, E½, Sec. 33, Blk. 24, H.&G.N. Sur. ..... T.D. 2,760 ft.; S.D. for pipe line connection.
Elbar Corp.'s No. 1 Huselby, 1,656 ft. from N, 350 ft. from W. Sec. 70, Blk. 24, H.&G.N. Sur. ..... Drlg. 2,510 ft.
Piney Oil & Gas Co.'s No. 4 Thompson, 330 ft. from S and E of E half SW, Sec. 42, Blk. 24, H.&G.N. Sur. Drlg. 2,100 ft.

Co-operation of the States in the Production and Conservation of Petroleum Is Advocated

By NORTHCUTT ELY

Executive Assistant to the Secretary of the Interior and Chairman of Advisory Committee to Federal Oil Conservation Board.*

More than 20 of our states have found it necessary to legislate on the production of oil and gas. Seven of the leading producing states have extended their legislation to the point of controlling, by some method or other and with various degrees of effectiveness, the rate of production of these resources. This body of statutory law, governing production, distinguishes the oil industry from every other natural-resource industry.

The body of existing statutes, while apparently constituting a growing interference with the production of oil, in fact represents a growing effort to eliminate certain artificial factors which themselves interfere with the laws of supply and demand. One of those factors, as Mr. Oliver and Mr. German have repeatedly demonstrated, is the lack of relationship between an oil pool as a physical unit and the artificial property lines which cross it. We are familiar with the prevailing doctrine of capture, its unfortunate history, and its effect in driving oil to market under the impetus of offset drilling without regard to the demand. A parallel factor is the lack of relationship between a producing region, as an economic unit, and the state lines which divide it. This paper is concerned with the efforts of the individual states in solving that first factor, and with the possible knitting together of these efforts for the solution of the second.

We have seen the effect of proration in a single field, and proration among the fields of a state; our present inquiry is whether such a thing as proration among the states can be accomplished.

There is an unavoidable interaction among the producing oil fields of a region, and this interaction is entirely independent of the state lines which arbitrarily divide the area. Oklahoma, Kansas and Texas may all be tributary to the same agricultural market, but their competition is free from the second element which sets the oil industry apart from all other natural resource industries. That feature is the disproportion between the initial and the ultimate rates of production of an oil pool, and between the initial and the ultimate cost of production per barrel. Investments in Oklahoma and Kansas, in settled fields, may be protected by limitations placed by those states on the wasteful flush production of neighboring fields, but an outbreak of a new flush field in Texas, pouring oil into a previously orderly market under the stimulus of competitive offset drilling and the cheap unit cost of a flush pool, may destroy those investments overnight. No state may relieve this pressure from outside its borders except by adherence of all of them to some common production plan.

Suggestions of National Plan

The suggestions of a national plan for production and the prevention of waste have turned upon three methods of approach: first, the proposal for voluntary action by the industry on a national scale; second, the proposal for Federal regulation; and, third, the proposal for interstate co-operation.

It is not the purpose of this paper to discount either of the first two methods, but to point out the possibilities of the third.

It is enough to say as to the first proposal that the antitrust laws will present a formidable obstacle, at least until their effect on nation-wide production agreements is tested by litigation. In 1928 and 1929 the American Petroleum Institute accomplished the task of bringing approximately 90 per cent of the country's production, and a large part of the world's production, into a tentative plan for curtailment to the 1928 level and division of production among areas of the world in the 1928 ratio. That plan, brought before the Federal Oil Conservation Board in the spring of 1929, encountered a report from the attorney general pointing out the practical certainty of litigation under the antitrust laws. If the applicability of the antitrust laws to private agreements limited solely to the production of natural resources remains an open question, it is one which the industry has not shown an inclination to press to a judicial conclusion.

The second proposal, calling for Federal control of production of oil and gas, advanced by Henry L. Doherty, the pioneer in the unit operation movement, has attracted much emotional controversy. Few lawyers have ever seen the plan reduced to the form of a proposed statute, or have been in position to argue out the merits of a specific program. Recently an able article in the Michigan Law Review has come to the support of the plan to use Federal authority, advancing in its support the treaty power, the commerce power, the taxing power, and a number of other bases. Whatever may be the merits or demerits of the proposal, it is enough to say here that the time required to effect such a plan, scrapping the machinery built up by the states, may be compared with the period of 17 years which has been required to bring the system of state control to its present degree of effectiveness. The industry has shown no inclination to expedite Federal control at any greater pace under peacetime conditions.

This brings us to the third suggestion —that of interstate co-operation. Its great advantage lies in the use and adaptation of existing and proven conservation agencies.

Interstate Commission Believed Needed

As long ago as 1922, Judge Brandeis, in a dissenting opinion in the Pennsylvania-Ohio-West Virginia natural gas controversy, pointed out the difficulty confronting the courts in endeavoring to fix a fair allocation of natural gas production and distribution for an interstate consuming region, and suggested that if such an apportionment is to be effected scientifically, some form of interstate public service commission will be required; and that even such a commission will face a formidable task.

In 1926 the Federal Oil Conservation Board, in its first report, pointed out that if any state was to be entirely successful in its conservation efforts it must have the co-operation of other producing states, and suggested an interstate agreement for such purposes.

In 1929, when the American Petroleum Institute's voluntary agreement plan came before the board and encountered there the attorney general's opinion, the board suggested to the Institute that it go to the states as a source of authority and seek their co-operation through an interstate agreement.

At a meeting in Colorado Springs which followed, the plan of an interstate compact was again advanced by Secretary Wilbur, and the principle received the approval of the four governors who were present. The delegates of the principal oil states, however, were not authorized to participate, and the controversy over the tariff and over the public domain largely obscured the purpose of the meeting.

Further suggestions of this method may be found in the Secretary of the Interior's annual report for 1931, and in Secretary Lamont's address to the American Petroleum Institute in November, 1931.

In the spring of 1931, confronted by the crisis precipitated by East Texas, the governors of the Mid-Continent region initiated the Oil States Advisory Committee, for the purpose of ultimately bringing the states into some form of interstate agreement. In September, 1931, it will be recalled that the states of Oklahoma, Kansas and Texas, through their governors and regulatory agencies, entered into an informal production agreement. The program of the Oil States Advisory Committee, presented to a meeting of the Federal Oil Conservation Board, received its encouragement.

Experiments With Rudiments of System

Over a two-year period the oil industry has experimented with the rudiments of a system of national planning. Committees of economists and engineers appointed by the Federal Oil Conservation Board and by the American Petroleum Institute have co-operated in periodically forecasting the demand for the refined products of crude oil and in estimating the crude production necessary to meet them. The Federal Oil Conservation Board has published six of these forecasts beginning with the period April 1 to September 30, 1930. The American Petroleum Institute has published independent studies contemporaneously. The two have been in general agreement and have constituted the charts by which the industry has largely steered its way out of the condition of chronic overproduction to one of reasonable hope. These studies have been of a purely advisory character. Some of them have endeavored to recommend state production quotas; most of them have recommended production quotas on a regional basis. Some of them have been followed fairly closely by state conservation authorities. If all had been followed present conditions would be substantially better than they are. The effort has been paralleled during 1931 by the work of the Oil States Advisory Committee which has taken the recommendations of the two committees, modified them and broken them down into production quotas for the various states. These quotas in turn have been followed with more or less care by the local regulatory agencies.

The time appears to be approaching when this growing movement toward co-operation should be put on a formal basis through an interstate agreement. It may be helpful here to examine the machinery which the Constitution has provided, and the cases in which it has been used in the past.

Constitution Authorizes Agreements

The Constitution, in Article 1, Section 10, authorizes agreements by inference; that is, it prohibits agreements between the states except with the consent of Congress, and prohibits alliances with foreign powers. The Articles of Confederation had authorized agreements also, and some compacts were made under it.

On 57 occasions Congress has authorized interstate agreements, generally as a method for collective solution of some regional problem.

Of the 57 compacts which have been authorized by Congress, 47 have also been authorized by one or more of the states concerned, and 34 have become finally effective. These exclude the so-called "enabling act" compacts between the Federal government and new states.

In addition, 13 compacts have been authorized by one or more of the proposed party states, but not by Congress; and of these, 10 have been placed in operation without express authority of Congress.

Forty-two states have authorized compacts of one sort or another with other states.

The oil-producing states have authorized compacts as follows: Arkansas 4, California 2, Colorado 2, Illinois 1, Indiana 1, Kansas 3, Kentucky 2, Louisiana 2, Michigan 2, Mississippi 2, Montana 1, New Mexico 8, New York 11, Oklahoma 5, Pennsylvania 2, Texas 7, Utah 1, West Virginia 2, Wyoming 4.

The objectives of the 57 compacts authorized by Congress and the 13 authorized by one or more states without express approval of Congress, may be divided into the six following general groups. Some of these compacts can be included under more than one heading.

Agreements Classified

1. Agreements fixing the boundaries of the state's jurisdiction; that is, neither enlarging nor diminishing its authority, but fixing the area within which it is to be exercised. There is a large group of such agreements, in some of which additional powers, outlined below, are conferred.

2. Agreements conferring concurrent jurisdiction over a common area, such as common waters. Agreements of this type differ from the simple boundary agreements by effecting extension of the state's authority beyond its previous area. Generally each state acts alone in exercising the new power. The Virginia-Kentucky compact from which the Ohio River states derive their concurrent jurisdiction, the Mississippi River group of agreements, and the proposed Lake Michigan compact, are examples.

3. Agreements conferring reciprocal privileges beyond state lines. This type includes extradition agreements, agreements permitting the serving of process beyond state lines, and granting to one state police authority within the boundaries of another. This group, like the second group, effects an extension of the state's jurisdiction, either for all purposes or for limited ones, but differs in that instead of providing for concurrent jurisdiction over a certain area, the new power is to be exercised within a given area by one state only. The best example is the New York-New Jersey agreement of 1833.

4. Agreements authorizing or permitting joint construction of interstate works. This type includes agreements for the construction of interstate bridges, the creation of interstate corporations for the development of a harbor, joint chartering of railroads, the joint building of tunnels, etc. The distinctive element of this group is the commitment to engage jointly in some new activity, rather than to fix police jurisdiction. New York has made such agreements with New Jersey and Vermont.

5. Agreements for joint police administration of adjacent areas. Of this class are the agreements for the joint administration of parks lying in two states. New York and New Jersey are parties to one.

6. Reciprocal agreements by states to effect certain action within their separate jurisdictions. Included in this group are the agreements, such as the Kansas City waterworks agreement, to exempt property of the other state from taxation;

*Before Petroleum Division, A.I.M.E., Ponca City, Okla., September 30, 1932.

agreements to preserve conservation laws, such as the Washington-Oregon agreement governing the taking of fish from an interstate stream: agreements to make appropriations for protection of forests, such as Congress has proposed, or the building of interstate works; agreements to limit the production of natural resources, and the 16 authorizations for agreements for the allocation of interstate streams. The last is the most recent and the most rapidly growing class.

It will be noted that each state, in entering a compact, has affected its pre-existing authority in one or both of two ways:

1. Assumed additional powers; that is, it has acquired authority of some kind beyond the state's boundaries, or,

2. Become obligated to a course of procedure within its own boundaries; that is, has incurred a limitation rather than acquired a new power.

With this background, let us turn to the specific proposal for an interstate agreement for the conservation of oil and gas. In general, this proposal calls for an agreement of the second kind, binding the states to carry out certain policies within their own borders but giving none any authority within the boundaries of another.

Four Objectives Set Up

Specifically, the interstate agreement contemplated in this discussion would aim at four objectives:

1. The creation of an interstate fact-finding agency. It would make periodical forecasts of the demand for domestic consumption and export, estimate supply, ascertain the quantity of oil producible without waste, and allocate production quotas among the states. This agency, composed of state representatives who might be selected from members of the various state public service commissions, would perform functions of an advisory character, and would have no administrative powers. It would supplement and not supplant the existing state agencies. Its estimates and forecasts once made would be transmitted to the states for their individual enforcement and to Federal authorities for action with reference to imports, outlined below. It is contemplated that this interstate agency would be aided by Federal participation in some form for the protection of interstate commerce and of the consuming states. That participation might take either the form of membership in the interstate agency, or might be in the form of concurrence in the agency's findings by some Federal authority in so far as these findings affect interstate and foreign commerce.

2. A commitment by each state to adjust its production in accordance with the allocation recommended by the joint interstate agency so far as the State Constitution will permit. It is contemplated that the state would carry out this commitment under its own laws and by means of its own public service commission. In other words, the compact would adopt the existing machinery for actual enforcement. No state would act beyond its borders, and the enforcement within each state would be an enforcement by its own agencies of the state's own statutes, most of them already tested in the courts.

3. An authorization to the interstate agency to recommend uniform conservation laws, but without a commitment on the part of the states to adopt them. In this respect the interstate agency would be a clearing house for the gradual improvement of conservation legislation. It might perform similar functions in the collection of data on refinery movements to assist in checking tax evasion.

4. Federal regulation of imports to accord with the forecasts of demand. It is contemplated that upon certification by the interstate agency of its estimated demand for the ensuing period of three, six or nine months, and concurrence by proper Federal authority, that the Federal government would restrict imports for that period to accord with the estimated demand. The method of controlling imports would be provided in the act of Congress authorizing the compact. There are several methods available. One is a flexible tariff to equalize the delivered cost of imported oil and its products with those of domestic origin. Another is the quota system, under which imports would be limited to some fixed percentage of the estimated national demand.

Several Methods Combined

The above, in brief, are the four principal objectives. It will be noted that this plan is a combination of several of the methods which have been used in other interstate compacts. The basic idea of a limitation enforced by each state separately, but in accord with a common plan, is close to that of the water-allocation compacts of the western states, notably the Colorado River compact, whereby each member agrees to limit its appropriations from the common stream, and each enforces the limitation within its borders. The present plan departs from the water compacts, which fix a permanent allocation, by providing instead for the periodical readjustment of the allocation by an interstate agency. Precedent for a permanent joint commission will be found in a number of the New York agreements. Unlike the New York commissions, the one proposed here would have fact-finding and not administrative powers. In that respect it is like those boundary agreements which call for a joint surveying commission. The proposed body, in recommending uniform legislation from time to time, would perform some of the functions of the present commissioners on uniform laws. The states in enacting them would be following the pattern of the compacts for establishing uniform fishery laws.

The net result would be a system insuring the stability of investments through assurance against erratic production swings; it would afford sufficient flexibility to meet changing conditions; it would gradually tend toward uniformity in conservation methods. Above all, it would insure the nation against the premature exhaustion of its oil reserves through the wasteful management of competing flush pools.

In the following paragraphs are considered some of the methods by which interstate agreements may be effected.

There are a number of ways of bringing an interstate compact into being. In general, they can be grouped as the contract method and the reciprocal legislation method.

If the first is to be effected, the steps generally are as follows:

1. An act of Congress authorizing the negotiation of the compact, and outlining its purposes. These authorizations in the past have generally provided that the compact shall not become effective until ratification by Congress; but there are instances in which Congress has given its unqualified consent in advance. In the present case it may be possible to authorize some temporary fact-finding agency pending completion of the compact.

2. Authorization by the state legislatures for commissioners, representing the several states, to meet and negotiate a compact, subject to ratification by the states.

3. The actual negotiation and signature of the compact by the various state commissioners.

The compact itself might follow something like the following pattern:

a. A recital of the parties.

b. A clause constituting the joint fact-finding agency, including the fixing of Federal participation, and defining the agency's powers.

Powers of the Agency

These, it is assumed, would relate (1) to the determination of demand, allocation of it, and notification to the states; (2) the recommendation of conservation laws; and possibly some additional functions, such as (3) the exchange of information about refinery runs and shipments for assistance in eliminating tax evasion. Its members might be authorized (4) to participate, at Federal invitation, in negotiations of international production agreements.

c. A clause pledging each state to adjust its production to its quota, but by means of its own laws and its own local regulatory body.

d. A clause fixing the notice required for withdrawal, for it is not contemplated that any state should be irrevocably bound.

4. Ratification by the state legislatures.

5. Ratification by Congress. This might provide, if the authorizing act did not, (a) for the Federal relationship to the fact-finding agency, either through participation in its membership or concurrence in its findings by some Federal agency, and (b) for the limitation of imports in accord with the estimated demand, and (c) for negotiation of international production agreements, in which negotiations the compacting states might designate their representatives to participate as Federal invitees and agents.

If the reciprocal-legislation method is followed, the following is an outline of possible procedure:

1. Authorization for the compact by act of Congress.

2. Negotiation of its terms by representatives of the States who may or may not have had antecedent authority from their legislatures.

3. Recommendation by the commissioners of a form of uniform statute for enactment by the several states. This statute would embody, first, an authorization for a representative of the state to act with representatives of other states as a permanent agency to carry out the functions outlined above for the joint interstate agency. Second, a commitment to enforce the allocation recommended by this proposed joint agency. Third, it might outline a model conservation statute for local enforcement. Fourth, a provision making the statute effective upon enactment of an identical or similar statute by a specific number of other states.

4. The enactment of the uniform statute by one, two, three or more states, whereupon the commissioners authorized by the statutes would meet and constitute a permanent joint commission, and would thereafter exercise their fact-finding and advisory powers. The local regulatory body of the state would proceed under the authorization of the same statute to enforce the allocations recommended by the joint interstate body, and would enforce the local conservation laws as prescribed in the uniform statute or contained in other statutes.

Would Eliminate Waste

To summarize briefly:

This discussion has been concerned with the extension of the existing system of state regulation of the production of oil and gas, to a basis of interstate co-operation. State legislation has resulted from an attempt to eliminate an artificial factor, namely, the impulse toward wasteful production necessitated by our prevailing theories of ownership of oil and gas. The proposed compact would eliminate a second artificial factor, the impulse toward wasteful production by separate pools, occasioned by the abnormally low production costs of wasteful flush fields. The method suggested adopts and utilizes the existing conservation machinery without involving the antitrust laws nor any constitutional questions as to Federal authority. It is proposed, however, to proceed with the co-operation of the Federal government, evidenced not only in its approval of the compact but in the enforcement of it as affecting importations.

What is proposed here is a method whereby these oil-producing states may collectively exercise their police power in trust for the nation—a nation which is without such police power and which must look to them for the protection of an irreplaceable national asset.

It is not a difficult method. The steps are plain. If there is a will toward a solution, this one can be accomplished in a matter of months. If the proven powers of the state are not an adequate platform on which to build, then let some other basis be proved and a new structure built. But no solution will be accomplished if there is no determination to reach one. The result depends almost entirely on the industry; others can suggest the routes, but the industry must supply the motive power.

Fewer Oil Wells and More Dry Holes
Record of September Developments

The number of wells completed in the fields east of California fell off in September, compared with August.

There were 1,324 completed wells in September and 1,478 in August, a decline of 154. The initial production fell off 29,900 bbls. There were 84 more dry holes and 2 fewer gas wells. The percentage of dry holes in September was high, mounting to 27, while in August less than 19 per cent of the wells completed were dry.

In rigs and wells drilling at the close of September the report shows 8 more rigs and 98 more drilling wells, a total of 106 more operations than at the close of August.

Following is the September summary:

SUMMARY OF ALL FIELDS
WELLS COMPLETED

	Comp.	Prod.	Dry	Gas
Eastern	123	459	21	11
Central Ohio	42	424	18	15
Lima	13	122	1	8
Indiana	23	339	8	3
Michigan	29	12,113	12	0
Kentucky	62	1,075	19	8
Illinois	10	....	9	1
Kansas	54	11,462	14	2
Oklahoma	117	39,042	55	3
North Central Texas	128	2,625	74	2
E. Cent. and E. Tex.	437	26,820	14	1
West Texas	20	2,456	4	0
Panhandle Texas	17	6,145	1	2
Gulf Coast Texas	67	31,349	23	3
Southwest Texas	91	16,566	28	3
North Louisiana	31	3,197	20	3
Gulf Coast Louisiana	23	8,109	10	0
Arkansas	5	....	4	1
Mississippi	4	500	1	2
Montana	7	60	4	1
Wyoming	9	245	4	0
Colorado	1	30	0	0
New Mexico	11	22,809	4	0
Total September	1,324	185,947	358	69
Total August	1,478	215,847	274	71
Difference	154	29,900	84	2

RIGS AND WELLS DRILLING

	Rigs	Drlg.	Ttl.
Eastern	39	152	191
Central Ohio	26	85	111
Lima	1	27	28
Indiana	4	72	76
Michigan	63	59	122
Kentucky	10	54	64
Illinois	1	13	14
Kansas	35	101	136
Oklahoma	127	403	530
North Central Texas	61	153	214
E. Cent. and E. Texas	217	272	489
East Texas gas field	2	26	28
West Texas	23	106	129
Panhandle Texas	14	52	66
Gulf Coast Texas	11	144	155
Southwest Texas	29	129	158
North Louisiana	46	105	151
Gulf Coast Louisiana	2	34	36
Arkansas	9	28	37
Mississippi	3	12	15
Alabama	0	3	3
Montana	10	62	72
Wyoming	12	77	89
Colorado	8	76	84
New Mexico	10	53	63
Utah	0	17	17
Total September	763	2,315	3,078
Total August	755	2,217	2,972
Difference	8	98	106

OIL CENTERS CLOSELY LINKED

The new General Kane highway in Pennsylvania, which will be formally opened on October 12, will bring two oil centers closer together than they have ever been before, so far as the traveler is concerned. Bradford, the most important producing center in the Pennsylvania grade oil fields, and Oil City, the most important refining center in the eastern fields, will be linked by roads that extend from Bradford to Kane; thence through Marienville to Leeper, thence west to Fryburg and Oil City. Before the days of good roads and automobiles oil men traveling between Oil City and Bradford were forced to take an out of the way railroad route which carried them well up into New York State.

A NEW DEPARTURE IN OIL WELL PUMPING

For years there has been an insistent demand for improved methods of pumping oil wells.

THE SULLIVAN PNEUMATIC PUMPING CYLINDER has been perfected for this purpose.

Extensive field tests of these units have demonstrated marked savings in installation and operating costs, with a large reduction in rod stresses and in rod breakage.

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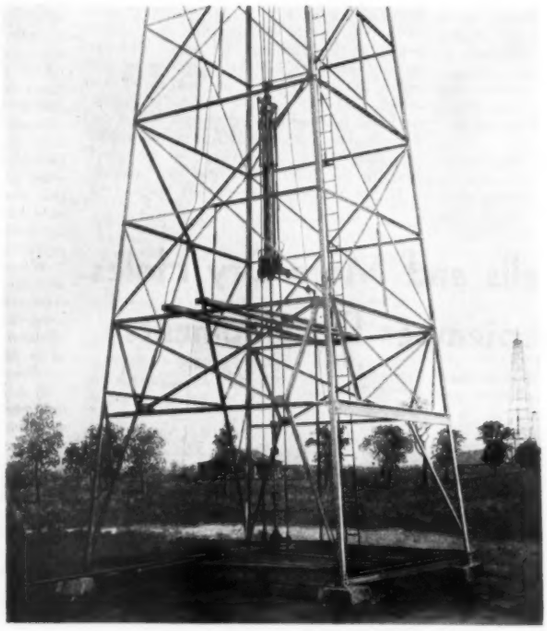
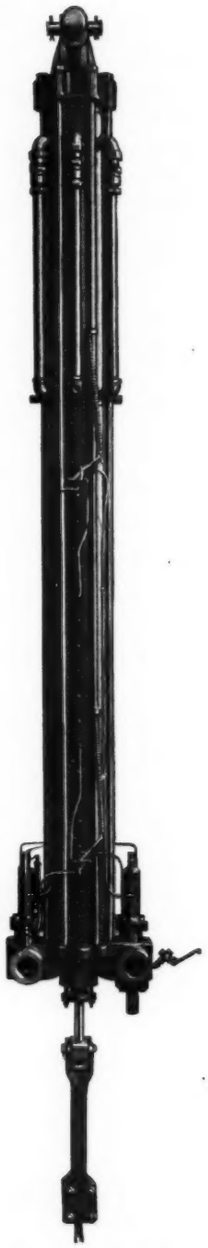


One of Six Sullivan Pneumatic Pumping Cylinders installed on a group of wells on a lease in Oklahoma.



Pneumatic Pumping Cylinder, showing air inlet and discharge openings and cut-off connections.

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Noble County Wildcat Producer Starts Revival of Leasing in Four Counties and New Tests

By W. A. SPINNEY
Staff Correspondent, Oklahoma Fields

During the week two important wildcat tests were started in Oklahoma, one in Oklahoma County and the other in Lincoln County. Another community well is getting started on the northwest edge of Oklahoma City, where work was started on the Carter Oil Co., Gypsy Oil Co. and Sinclair Prairie Oil Co.'s No. 1 Shawbell Community, C SW NE, Section 1-12-4w. These companies have unitized a block of approximately 953 acres in which the Carter Oil Co. holds a two-thirds interest, the Gypsy Oil Co. a one-fourth interest in the remaining, and the Sinclair Prairie Oil Co. owns the balance. These three companies jointly own the 400 acres of state school land in Section 36-13-4w, Oklahoma County, but this acreage is not included in the community block. The Carter Oil Co. also owns considerable acreage outside of the block and the other companies are well represented.

Amerada Petroleum Corp. and others' No. 1 Lafoon, NE cor. SE NE, Section 9-13-6, is a new location in Lincoln County, on a seismograph high, and about 2 miles east of another test drilled by the Atlantic Oil Producing Co. which was a dry hole.

Crude Oil Demand

The statewide proration committee met at the offices of the Mid-Continent Oil & Gas Association, Friday, October 7, and after surveying the various factors of production and demand for crude oil in Oklahoma during the fourth quarter found that it was apparent that the demand for crude oil from all producing areas outside of Oklahoma City Field would be approximately 12,000 bbls. per day less than the demand in the third quarter of the year, and that this demand would total approximately 307,000 bbls. per day.

The statewide proration committee will recommend to the operators that the production be curtailed in the amount of approximately 12,000 bbls. per day in the prorated areas outside of the Oklahoma City Field. The demand from the Oklahoma City Field was not considered.

Will Test New Producer

The owners of the Noble County community wildcat well southwest of Perry plan to make a production test during the week. The well, L. H. Wentz and others' No. 1 Wolff, C SE NW, Section 17-20-2w, has been shut in for more than a week awaiting a pipe line connection. During the last week a 3-inch pipe line was completed from the main pipe line of Continental Oil Co. to the well and the oil now in storage in the five 500-bbl. tanks will be emptied and arrangements made to handle the output of the well on a 10-day potential gauge. The well as it now stands is believed to be good for 1,800 bbls. daily from the Wilcox sand at 5,195-97 feet, but it may be drilled deeper. The companies owning interests in the 2,160-acre community block include: Shell Petroleum Corp., Gypsy Oil Co., Sinclair Prairie Oil Co., L. H. Wentz, Twin State Oil Co., Phillips Petroleum Co. and Empire Oil & Refining Co.

The first location in the area surrounding the well was reported to be L. Rollins and Hall-Briscoe, Inc.'s No. 1 Frank, SE cor. SW, Section 6-20-2w, Noble County, on Magnolia Petroleum Co.'s acreage.

During the week another well was being added to the Sacred Heart extension area, south of the St. Louis Pool, in southern Pottawatomie County. The well is C. W. James and Reynolds Drilling Co.'s No. 1 Garrett, SE cor. NW Section 28-7-4. It found the Simpson sand at 4,076 feet, where the drilling was stopped to erect tankage. The top of the Viola lime was found at 4,050 feet.

New Work in Osage County

As the result of the recent acreage sale of Osage County leases the Bay Oil Co. has made a location for No. 1, SW cor. SE Section 25-24-7. This test was staked immediately after the approval of the lease by the Osage tribal council. The Bay Oil Co. paid a bonus of $11,500 for this 160-acre tract. The test offsets another lease the same company purchased at the sale, the NE of Section 36-24-7, on the Naval Reserve, on which a well must be drilled within one year.

In the south end of the Naval Reserve area the Johnson Oil & Refining Co.'s No. 1 well, SE cor. NE SE Section 11-23-7, found the Burgess sand at 2,523-2,601 feet, with a showing of oil, gas and water. The casing was landed at 2,607 feet and it will be drilled to the Wilcox sand.

The Decline of Seminole

The most recent water report on the Seminole Field, which included oil and the salt water production of all the pools in the Greater Seminole area as of July, showed that 83 per cent, or 2,150 wells, were making water in varying quantities. The 2,583 wells in the area, which includes Seminole and Pottawatomie Counties and the Allen Field in Pontotoc and Seminole Counties, averaged 184,467 bbls. of water per day, and only 129,783 bbls. of oil. The wells produced 1.43 bbls. of water for every barrel of oil. The potential oil production of the 19 pools included in this report—Allen, West Asher, Bowlegs, Carr City, Earlsboro, East Earlsboro, Earlsboro Townsite, South Earlsboro, Konawa, Little River, East Little River, Maud, Mission, Sasakwa, Searight, Seminole City, East Seminole, West Seminole and St. Louis—as of August 1, was 280,000 bbls. per day, according to Umpire Collins, and the actual production around 120,000 bbls. More than 350 wells in the big area had reached the stripper class, having a daily production of only 3,493 bbls. of oil, but which were also producing 14,337 bbls. of salt water, an average of 4.1 bbls. of water for each barrel of oil. There have been 3,056 oil wells drilled in the pools above named, of which 473, or 15 per cent, had been plugged up to the first of August.

Notwithstanding the small daily allowable production from the Oklahoma City Field operators continue to drill new wells close together in the platted areas in the southwest part of the field.

In the area surrounding the Nicholson Heights addition in the NW SE, Section 22-11-3w, four locations have been made on Block 3 of that addition. Phillips Petroleum Co. will drill on Lots 34 and 35, R. A. Wallace has a rig on Lots 48 and 49, Anderson-Kerr has a rig on Lots 42 and 43, and another rig on Lots 3 and 4, all in the same block. Another rig is being erected by Gulf Production Co. of Oklahoma, on Lots 25 and 26, Block 4. Copotuck, Inc. has a rig on Lots 33 and 34, and Wallace has a rig on Lots 8 and 9.

These blocks are believed to be about five acres each, while those within the city limits in the northwestern part of the field are only two and a half to three and a half acres. Under the city zoning restrictions only one well is permitted to a block.

The pipe line shipments and the production from the Oklahoma City Field show a decline for the month of September from the previous month. The production totaled 2,103,977 bbls., a decline of 439,916 bbls. from the August totals. The pipe line shipments declined approximately 216,367 bbls. from the August totals to 2,190,809 bbls. The total amount of oil in lease storage on October 1 was 789,986 bbls.

Working storage in the field was reported at 109,202 bbls. The regular monthly report of the military shows that there are 933 completed wells in the field with a potential of 4,275,660 bbls. daily. The total overproduction in the field was 1,011,069 bbls. while the total underproduction was 449,886 bbls.

In Southern Fields

The activity in southern Oklahoma is centered in the proven areas. A new well in the Tatums Field in Carter County, was preparing to drill the cement plug and another well in the Healdton Field, was landing pipe on top of the sand.

Midco Service Corp.'s No. 3 Burton, NW cor. SW SE, Section 31-1s-2w, Carter County, in the south end of the Tatums Pool, was ready to drill the cement plug and test the showing of oil found at a total depth of 2,232 feet. The casing was landed on top of the oil showing.

Locations have been made for F. Lundy and others' No. 1 Majors, NE cor. SE NE, Section 13-1s-2w, and Payne and others' No. 1 Brooks, NW cor. SW SW, Section 13-1s-2w. Both locations are in the north end of the field.

Schermerhorn-Ardmore Oil Co.'s No. 14 Edwin B. Cox, C E half SE SE, Section 24-4s-3w, Carter County, in the south end of the Healdton Field, found the pay at 1,107 feet and landed and cemented the casing. It was expected that plug will be drilled this week. Same company's No. 11 Cox was completed for a 10-bbl. pumper from sand at 1,075-1,105 feet.

The wildcat test in Comanche County was bailed dry during the week while making a production test. A. E. Trowbridge and others' No. 1 Price, SE cor. NE NE, Section 30-2-9w, was bailed dry at a total depth of 2,043 feet. The well was drilled to a total depth of 2,101 feet, where it started flowing by heads. It made five flows of about 20 bbls. each in six hours and was then shut down until more tankage was erected. Northwest of this well Petroleum Operators, Inc.'s No. 1 J. Allen, W half SW, Section 24-2-10w, was shut down at 225 feet, waiting for the completion of No. 1 Price.

Western Areas Reviving

As the result of the discovery of oil in the wildcat test drilled by L. H. Wentz and others in Section 17-20-2w, Noble County, the southwestern part of Noble and northern Logan and Garfield Counties are experiencing a lease and royalty play that is the most active the State has had in several years, with indications that one or more wildcat tests will be started before the end of the year.

Leases are being taken on five and ten-year contracts and it is believed that they are going to the major oil companies. The leasing play is centering around Townships 18-2w and 19-2w, Logan County, and Township 20-2w, Noble County. The activity has also extended into Garfield and Payne Counties. The following transcations are some of the instruments that are of record, Logan County: To J. E. Mabee, NE Section 25-19-2w; Sinclair Prairie Oil Co. the NW Section 24-19-2w, SW Section 5-18-2w, NE Section 10-19-2w, SW Section 7-19-2w, SE Section 4-19-3w, E half SE Section 31-20-2w in Noble County, and E half NE Section 3-19-2w, Logan County; The Texas Company, the SE NW Section 4-17-4w, Logan County; Mid-Continent Petroleum Corp. part of SW Section 2-16-2w and N half SE, Section 4-17-4w; Gypsy Oil Co. N half SE Section 26-19-2w, SW Section 10-19-2w, E half NE Section 12-19-2w, and S half NW, Section 5-19-2w; Twin State Oil Co. the NE Section 16-17-4w and SW Section 5-17-3w; Amerada Petroleum Corp. the SE Section 5-19-2w; Skelly Oil Co. the NE Section 20-19-2w and SE Section 15-17-4w; Stanolind Oil & Gas Co. the W half SW Section 3-19-2w; Phillips Petroleum Co. the SE Section 9-19-2w.

Noble County leases include the following: Gypsy Oil Co. the SE Section 13-20-2w, NE Section 30-20-2w, SW Section 5-20-2w, NW Section 22-20-2w, SE Section 13-20-2w and W half NE Section 23-20-2w; Sinclair Prairie Oil Co. the SW NE and NW SE Section 1-21-2w, S half NE Section 20-20-2w, NE Section 26-20-2w; Stanolind Oil & Gas Co. the SW Section 32-21-2w, N half SW Section 27-20-2w, NE Section 27-20-2w, part of SW Section 35-20-2w, E half NE Section 29-20-2w, part interest in SE SW Section 29-21-2w; Carter Oil Co. the W half SE Section 29-20-2w; J. E. Mabee the SW Section 36-20-2w, SW Section 11-20-2w, NE SW Section 6-20-2w.

Holdenville Activity

The Holdenville area in Hughes County continues to be one of the active areas in the State. During the week G. Manahan's No. 1 Narcomie, NW cor. SW SW, Section 10-7-8, blew in from the Booch sand making 15,000,000 feet of gas a day and 800 bbls. of oil. The total depth of the well was 2,919 feet, in the Booch sand, and was being swabbed when it drilled itself deeper to make oil and gas.

Pringle & Marshall's No. 1 Rogers, SE cor. NE SE, Section 8-7-8, Hughes County, was plugged back from a total depth of 3,013 feet to 2,992 feet, where the company will standardize.

Galbreath and others' No. 1 A. Narcomie, SW cor. NW, Section 14-7-8, swabbed 65 bbls. of oil from the Calvin sand at 1,165-95 feet in 12 hours. It is estimated at 100 bbls. daily.

Tate & Perkins' No. 1, in the C W half SE NW, Section 23-7-8, Hughes County, was shut down after finding water in what is believed to be the Calvin sand at a total depth of 1,100 feet.

During the week two wells were added to the West Seminole Pool, in the Greater Seminole area. The Texas Company's No. 4 Sandlin, NW cor. SE SW, Section 29-9-6, flowed 1,220 bbls. of oil in 24 hours on the air-gas lift from the Wilcox sand at a total depth of 4,150 feet. Phillips Petroleum Co.'s No. 5 Fixico, SW cor. NW, Section 20-9-6, flowed 685 bbls. of oil from the Calvin sand in 21 hours from a total depth of 2,745 feet. The gas was estimated at 9,000,000 feet a day.

Amerada Petroleum Corp.'s No. 4 A. Chase, NW cor. SW SE, Section 29-9-6, Seminole County, swabbed 35 bbls. of oil an hour from the Wilcox sand at 4,095-4,116 feet.

The production in the Sacred Heart

area of southern Pottawatomie County was extended when Stewart & Clark's No. 1 Brister, NW cor. NE NE, Section 28-7-4, found a hole full of oil in the Hunton lime at 3,770 feet. It was drilling deeper at 3,825 feet. The well made 17 bbls. of oil in 24 hours while it was drilling deeper.

Phillips Petroleum Co.'s No. 1 Paris, NE cor. SE, Section 35-7-4, cored from 3,417-38 feet where a showing of oil was found. It was drilling deeper at 3,905 feet.

Alfalfa County

Bailey and others' No. 1 Acre, C SW NE, Section 14-24-11w, was abandoned at 5,502 feet.

Atoka County

E. B. Croxton and others' No. 3 Mason, SW cor. NW NW NW, Section 2-1s-14, was abandoned at 450 feet.

Creek County

H. E. Dowd and others' No. 1 Sapulpa (twin), NW cor. SW SE, Section 33-18-11, is a rig. Swift and others' No. 1 Nance, SW cor. NE, Section 1-18-8, made 20 bbls. from 2,392-2,428 feet. Dixie Drilling Co.'s No. 5 Walker, NE cor. SW SW, Section 21-18-9, an old well drilling deeper, made 190 bbls. from 3,185-3,215 feet. R. B. M. Oil Co.'s No. 1 Willoughby, SE cor. NW SW, Section 26-18-9, made 250,000 feet of gas from 2,092-2,102 feet. Barger and others' No. 8 Fulkerson, SW cor. NW NW, Section 5-17-7, an old well drilling deeper, made 8 bbls. from a total depth of 2,280 feet. Whitten & Wilcox's No. 1 Harris, CNL SW NE, Section 12-17-10, was abandoned at 2,493 feet. S. W. Anthony's No. 4 Muskogee, C NE NE, Section 9-16-12, made 2,000,000 feet of gas from 1,869-91 feet. Pure Oil Co.'s No. 1 Steele, NE cor. SW, Section 6-15-7, made 598 bbls. from Wilcox at 3,531-3,665 feet. Calvin and others' No. 4 Harvey, NW cor. SW NE, Section 4-14-10, made 14 bbls. from Misener at 3,279-85 feet. Jenkins and others' No. 1 Miley, SW cor. NW, Section 28-14-10, was abandoned at 3,339-64 feet.

Hughes County

J. E. Crosbie's No. 1 Narcomie, NE cor. SW SW SW, Section 10-7-8, is a location. Manahan and others' No. 1 Long, NW cor. SE SW SW, Section 10-7-8, is a location. Fleetborn and others' No. 1 Foster, NW cor. SW, Section 14-7-8, is a machine. Radial Oil Co.'s No. 1 Foster, NW cor. SW SW, Section 14-7-8, is a machine. Same company's No. 1 Diamond, NE cor. NW NW, Section 22-7-8, is spudding. Mid-Continent Petroleum Corp.'s No. 1 Harjo, NE cor. SE, Section 9-7-8, made 360 bbls. in 12 hours from 2,885-2,926 feet. Same company's No. 2 Tiger, SW cor. SE NE, Section 9-7-8, made 375 bbls. from 2,895-2,932 feet in 12 hours. Genter and others' No. 1 Holmes, SW cor., Section 11-7-8, made 75 bbls. from 1,165-95 feet.

Kay County

The Texas Company's No. 1 Buckholter, C SW NW, Section 9-27-1w, an old well drilling deeper, made 12 bbls. from 3,596-3,606 feet. Blubaugh and others' No. 1 Makeswater, C NW NE, Section 30-25-1, made 5,500,000 feet of gas from 2,556-69 feet.

Lincoln County

Gypsy Oil Co.'s No. 1 Rich, SE cor. NW, Section 1-15-6, an old well drilling deeper, made 240 bbls. from Wilcox at 3,660-98 feet. H. J. Henry and others' No. 1 Strip, SE cor. NW, Section 1-15-6, made 265 bbls. from Wilcox at 3,694-3,704 feet. Stanolind Oil & Gas Co.'s No. 1 Bowers, NE cor. SW, Section 1-15-6, made 1,260 bbls. from Wilcox at 3,680-94 feet.

Muskogee County

Beland Oil Co.'s No. 10 James, NW cor. SE SE, Section 18-14-17, is a rig. Simpson and others' No. 3 Manuel, NW cor. SW SE NE, Section 24-15-17, was abandoned at 1,483 feet. Foltz and others' No. 2 Bemo, NE cor. SW, Section 8-15-18, made 50 bbls. from 1,636-42 feet. Finefield and others' No. 2 Rentie, SE cor. SW NE NW, Section 9-15-18, was abandoned at 1,432 feet. Ohio Osage Oil Co.'s No. 2 Beams, CEL NW SW, Section 19-14-16, an old well drilling deeper, was drilling at 1,560 feet. Mack Drilling Co.'s No. 2 Barnett, CNL NW NE, Section 34-16-15, made 250,000 feet of gas from 1,096-1,107 feet. W. B. Pine and others' No. 1 Barnett, SW cor. SE NE, Section 34-16-15, made 1,500,000 feet of gas from 1,118-55 feet.

Oklahoma County

Carter Oil Co.'s No. 1 Community Shawbell, C SW NE, Section 1-12-4w, is a rig. Phillips Petroleum Co.'s No. 1 Haddox, SE cor. SW SE, Section 15-11-3w, made 351 bbls. in four hours from Wilcox sand at 6,478-6,514 feet. Harper & Turner's No. 1 Alvah, CEL SE NW, Section 22-11-3w, made 1,512 bbls. in four hours from Wilcox sand at 6,500-50 feet. Indian Territory Illuminating Oil Co.'s No. 4 Little, SE cor. NE, Section 27-11-3w, made 603 bbls. in four hours from Wilcox sand at 6,577-6,625 feet. Same company's No. 10 Oklahoma State, NW cor. SW NW, Section 35-11-3w, made 969 bbls. in four hours from Wilcox sand at 6,580-6,647 feet.

Okmulgee County

Babcock and others' No. 4 Harris, SE cor. SW NW, Section 1-14-14, is spudding. Curtis Oil Co.'s No. 1 Berryhill, NE cor. NW NE, Section 17-14-13, was abandoned at 2,605-07 feet.

Okfuskee County

Schook-Phillips Petroleum Co.'s No. 1 Fish, SW cor. SE, Section 25-10-10, an old well drilling deeper, made 37 bbls. from 3,185-93 feet; total depth 3,944 feet.

Pottawatomie County

Terry and others' No. 2 Brown, NW SW NW, Section 14-7-4, an old well drilling deeper, total depth 3,748 feet, rigging up standard tools. Gypsy Oil Co.'s No. 1 Bruno, SE cor. NE NW, Section 25-7-4, made 79 bbls. from 4,494-4,514 feet.

Pontotoc County

Stanolind Oil & Gas Co.'s No. 4 Roberts, SW cor. NW NE, Section 30-5-5, is a rig.

Pawnee County

M. P. Tippen and others' No. 1 fee, NE cor. SW SW, Section 24-22-6, was abandoned at 2,950 feet. Klintworth and others' No. 1 Klintworth, SE cor. NE SE, Section 29-20-8, was abandoned in Wilcox sand at 3,096-3,118 feet.

Stephens County

George Pace's No. 5 Allen, NE cor., Section 3-2s-8w, was drilling at 60 feet.

Tulsa County

McFadden and others' No. 1 Bunger, CEL SE NE, Section 28-17-13, is a rig. A. J. Pettus' No. 1 Taylor, SE cor. NE, Section 1-17-13, was abandoned at 2,072 feet. Boyd and others' No. 6 Horn, NE cor. SE SW NW, Section 23-18-14, was abandoned at 1,440 feet. Myers and others' No. 1 Hardridge, NE cor. NW SW, Section 12-18-12, made 75 bbls. from 2,002-28 feet. Superior Oil Co.'s No. 1 Sanger, C W half SE SE, Section 9-19-10, was abandoned at 2,473 feet. Same company's No. 2 Sanger, C W half SE SE, Section 9-19-10 (twin), was spudding. Glidden Oil Corp.'s No. 2 Phillips, CSL NE SW, Section 15-19-11, was spudding. Buckcreek Oil Co.'s No. 13 Berry, SW cor. SE SW, Section 20-19-12, an old well drilling deeper; total depth 2,225 feet. Short and others' No. 1-A (twin), SW cor. NE SW, Section 32-19-12, made 4 bbls. from 676-95 feet.

Wagoner County

E. Mills' No. 1 Porter, NE cor. NW NE, Section 7-15-17, made 1,000,000 feet of gas from 990-95 feet. Metzger & Foltz's No. 4 Wilson, CNL SW NW, Section 30-17-17, made 15 bbls. from 1,320-28 feet. Flanigan and others' No. 1 Smith, CWL SW, Section 36-18-15, made 20 bbls. from 963-78 feet. Detrick and others' No. 2 Lincoln, CEL NW SW, Section 18-18-15, was spudding. La Piere and others' No. 1 McIntosh, CWL SW SW, Section 13-18-15, was spudding.

Wildcat Operations in Oklahoma

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	S.D. 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	S.D. 5,502 ft.

ATOKA COUNTY

Barton's No. 2 Miller, NE NW SE SW Sec. 26-1-14	Drlg. 150 ft.
Hick's No. 2 Morris, SE NE NW SE Sec. 5-1-15	Drlg. 215 ft.
George's No. 1 Reddin, SW NE SW Sec. 19-1-15	Drlg. 110 ft.

BECKHAM COUNTY

Pattel Royalty's No. 1 Goose Tree, SW SE SW SE Sec. 32-10-23w	S.D. 924 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-12-22w	S.D. 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	S.D. 3,575 ft.

BLAINE COUNTY

Watonga Petroleum Co.'s No. 1 Masters, SW NW NW, Sec. 27-16-11w	S.D. 672 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	S.D. 1,115 ft.

CHEROKEE COUNTY

La Piere et al's No. 1 Woods, C SE SE Sec. 27-17-21	S.D. 1,504 ft.

COAL COUNTY

Dodd & Burton's No. 1 Grigsby, NW SE NE, Sec. 35-1-8	Location.
Funk & Russell's No. 1 Miller, SE NE Sec. 10-2-8	Fishing 2,630 ft.
Radial Oil Co.'s No. 1 McGraw, NE NW Sec. 2-1s-8	Abnd. 1,750 ft.

COMANCHE COUNTY

O. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	S.D. 1,450 ft.

CREEK COUNTY

O. O. Owens' No. 1 fee, NW cor. Sec. 23-15-7	Drlg. 400 ft.
S. L. Jillson et al's No. 1 Starr, SE NW Sec. 18-15-8	Drlg. 3,515 ft.

CUSTER COUNTY

Miley Pet. Co.'s No. 1 Caldwell, NE Sec. 13-14-14w	Location.

ELLIS COUNTY

Algers Pet. Co.'s No. 1 Roper, C SE NW Sec. 21-20-24w	S.D. 50 ft.

GRADY COUNTY

English Drlg. Co.'s No. 1 Heenan-Coe, NE SE NE, Sec. 32-3-7w	Show oil 3,255-87 ft.; to test drlg. out cmt.; swbd. 3 bbls. per hr., est. at 50 bbls. daily.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	S.D. 5,850 ft.

GREER COUNTY

French's No. 1 Murphy, SW NW Sec. 23-7-21w	S.D. 1,645 ft.

HASKELL COUNTY

Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19	S.D. 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-19-9	S.D. 200 ft.

KAY COUNTY

Bluebaugh et al's No. 1 Indian, C NW NE Sec. 30-25-1	T.D. 2,607 ft; P.B. to 2,569 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1	Location.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2	S.D. 3,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w	Rig on ground.

KIOWA COUNTY

McWhirter Bros.' No. 1 Kline, SE NW, Sec. 5-6-16w	S.D. 830 ft.
Christian's No. 1 Jones, NE SE Sec. 8-7-18w	S.D. 1,610 ft.

LINCOLN COUNTY

Sovereign Oil Co.'s No. 1 Flowers, SW SE SE Sec. 14-12-3	Drlg. 4,105 ft.

NOBLE COUNTY

Wentz Oil's No. 1 Wolff, C SE NW Sec. 17-20-2w	5,130-78 ft.; second Wilcox 5,193-96 ft.; flowed 1,817 bbls. 24 hrs.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w	S.D. 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w	S.D. 5,515 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5	S.D. 1,950 ft.

PITTSBURG COUNTY

Moffett & Hall's No. 1 Jones, NW cor. Sec. 14-8-14	Fishing tools 1,675 ft.

PONTOTOC COUNTY

Blackwell Oil & Gas Co.'s No. 1 Abbott, NW SW NE Sec. 14-4-6	Drlg. 930 ft.
Williams' No. 1 Krath, NE SE Sec. 33-3-4	Drlg. 890 ft.
Edna Marie's No. 1 McWhirt, NE SE Sec. 11-2-6	S.D. 570 ft.
Sunray Oil's No. 1 Grant, SE NE Sec. 11-4-8	Drlg. 2,370 ft.

POTTAWATOMIE COUNTY

Brown et al's No. 1 Sauter, NW cor. Sec. 36-11-4	Digging cellar.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-24w	S.D. 5,150 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w	S.D. 3,420 ft.

SEMINOLE COUNTY

Donnelly et al's No. 1 Shepard, SE NE Sec. 4-8-8	U.R. 1,120 ft.

WASHITA COUNTY

Miley Pet. Co.'s No. 1 Montgomery, SW NW SE NW Sec. 23-9-17w	S.D. 1,004 ft.
Miley Pet. Co.'s No. 1 Wolfe, NE SW Sec. 23-9-17w	Rig.
Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w	Show oil 2,459-67 ft.; S.D. 2,757 ft
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18	S.D. 2,160 ft.

Oklahoma Panhandle

TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-1E	T.D. 4,720 ft.; to cement

Southern Oklahoma

ATOKA COUNTY

Malarnee et al's No. 2 D.O.K. Land, C SE SE Sec. 35-2-13	Rig.
Malarnee et al's No. 1 D. O. K. Land Co., C E half SE Sec. 35-2s-13	Drlg. 704 ft.
E. B. Croxton's No. 3 Moore, CWL NW NW Sec. 2-1s-14	S.D. 450 ft.
McClure et al's No. 1 Little John, NE NW NE SW, Sec. 9-1s-14	Abnd. 225 ft.
Morris et al's No. 1 Ray, NE NW NE, Sec. 8-2s-12	S.D. 610 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10	S.D. 2,850 ft.

BRYAN COUNTY

A. C. Hahnee et al's No. 1 White, NW NE NW Sec. 28-6s-8	S.D. 1,542 ft.

JEFFERSON COUNTY

Bridwell's No. 1 Wolghomuth, NW NE SE NW, Sec. 30-6s-5w	S.D. 500 ft.
E. S. Bonner's No. 1 Burgess, NE SE Sec. 13-5s-8w	S.D. 750 ft.

MARSHALL COUNTY

Thomas' No. 1 Setliff, SW SE SE SW Sec. 36-5s-6	S.D. 20 ft.

McCURTAIN COUNTY

Stumpfs' No. 1 Robert Harris, SW NW SW Sec. 14-9s-25	S.D. 2,778 ft.

PUSHMATAHA COUNTY

Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-3s-13	S.D. 1,950 ft.

STEPHENS COUNTY

Calif. Prod. & Oper. Co.'s No. 1 Florence, NE NW SE Sec. 11-3s-6w	S.D. 330 ft.
Calif. Prod. & Oper. Co.'s No. 1 Garnett, SE NE NE Sec. 11-3s-6w	Drlg. 200 ft.
Calif. Prod. & Oper. Co.'s No. 1 Suton, NE SE SW Sec. 12-3s-6w	Location.
Gillette Bros.' No. 1 Cooley, NW SE NW Sec. 17-2s-8w	Rig.
George's No. 1 Ryan, NW SW NE, Sec. 31-3s-15	S.D. 610 ft.

H. H. HALLECK DEAD

Harry H. Halleck, 55, a special representative of the Sun Oil Co. at Dallas, Tex., died there Friday morning. Mr. Halleck came to Tulsa in the early days of the Mid-Continent oil field.

Materials the oil and gas industries have long needed NOW PERFECTED .....AND AVAILABLE

CRANE CO. offers a complete line of steel welding materials, designed to meet all needs for welding installations in pipe lines and plants. When you make up welded joints for higher pressures and temperatures, you will find in this line the fittings exactly adapted to modern needs.

Included in it are 90° and 45° elbows, tees, return bends, welding neck flanges, Cranelap welding nipples.

The materials are of open hearth steel tubing or steel plate, depending on the article or the manufacturing process used. Each item has been carefully designed, tested, and proved for its service and for the pressures at which it is recommended. Satisfaction and dependability are assured by the 77 year Crane reputation.

Sizes 1″ to 18″ of the 45° and 90° elbows are made from seamless tubing. Tees are made of forgings. Return bends are made of seamless tubing in sizes from 1″ to 6″ with centers ranging in sizes up to 18″.

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Be sure that you are posted on these two new Crane services to the oil and gas industries. A request will bring the Crane Welding Circular and Crane Lubricating Plug Valves Circular to you with complete information.

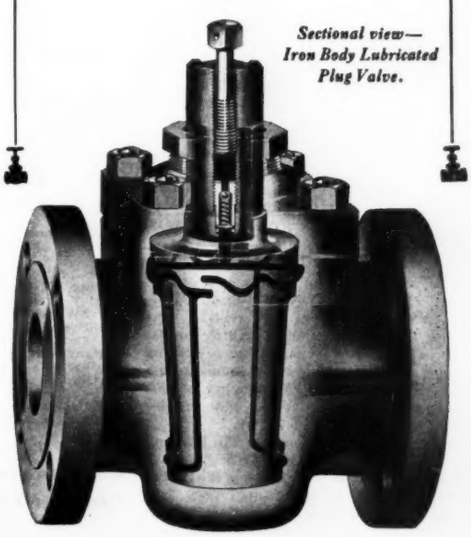
Combination of No. 574 Cranelap welding nipple and No. 572 Cranelap Flange.

No. 352-E 90° Elbow. In 1″ to 18″ sizes.

No. 355-E Return Bend. In 1″ to 6″ sizes with various centers.

No. 354-E 45° Elbow. In 1″ to 18″ sizes.

Series 90 Cast Steel Lubricated Plug Valve.



Sectional view— Iron Body Lubricated Plug Valve.

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PIPING MATERIALS TO CONVEY AND CONTROL STEAM, LIQUIDS, OILS, GAS, CHEMICALS

Order for the Conservation of Gas Is Issued By Public Service Commissioners of Kansas

By W. A. SPINNEY
Staff Correspondent, Kansas Fields

An attempt is being made by the Kansas Public Service Commission to conserve the natural gas in the State and a series of tests is being made on wells that are producing both oil and gas.

The State's daily average production is being held at an even figure, the daily average for the week ending October 8 being approximately 99,500 bbls. which is a 500-bbl. decline from the previous week.

The potential production of the central western areas in the State shows a decline for the first time in nearly three years, notwithstanding the fact that only a few of the various new pools have pipe line outlets and the others have been shut in since the completion of the wells.

The gas committee of the Kansas Oil Advisory Commission and the conservation committee held a joint session on October 6, at McPherson, to discuss the waste of natural gas and consider the problem of conserving gas which is being produced along with oil. An attempt is being made to formulate production rules which will later be recommended to the Kansas Public Service Commission. The object of the rules will be the conservation of gas from oil wells in a manner that will not hamper oil production.

It was decided to conduct a series of tests at a number of wells in the Ritz-Canton-Decker Field in McPherson County by operators that have wells making both oil and gas in co-operation with agents of the Public Service Commission.

The McPherson Oil & Gas Co. is also to make a number of tests on oil and gas wells and, where it can, is to increase its takings of natural gas from the area.

The conclusions came after a conference between operators and agents of the commission and which was also attended by Dr. R. C. Moore, state geologist of Kansas.

Production from the Viola lime was extended a half mile on the west side of the Ritz-Canton-Decker Pool by the completion of a well estimated at 1,000 bbls. initial production. Vernon Oil & Gas Co.'s No. 1 Lewis, SE cor. SW, Section 26-19-2w, found the pay at 3,367-87 feet. The completion of this well indicates that the west side of the pool has future possibilities as the area is underlaid with two producing horizons, the chat and the Viola lime.

On the south edge of the Ritz-Canton-Decker Field the Lario Oil & Gas Co.'s No. 1 A. Ritz, NE cor. SE, Section 1-20-2w, found the top of the Viola lime at 3,400 feet and was preparing to drill deeper and test the horizon.

State Oil Umpire L. R. Pickrell gives the potential of the Ritz-Canton-Decker Field as 156,476 bbls. October 1, and that the pipe line nominations from the area were approximately 17,300 bbls. during the month of September. There were 169 wells included in this potential, of which number 69 wells were producing from the chat and 100 wells from the Viola lime.

Deep Test in Ford County

The wildcat test of Swain and others, No. 1 Henthorne, C NW Section 21-25-24w, Ford County, in the western part of the State, is the only drilling operation in that county, and was drilling around 5,505 feet in what some believe to be Simpson sand. A showing of gas was reported in the Viola lime, under which some water was found.

In the Johnson Pool, in McPherson County, Barnsdall Oil Co.'s No. 1 Bridgens, SW cor. SE Section 35-19-3w, found the chat at 2,994-3,045 feet, and casing was landed at 2,999 feet. When the well was opened it flowed at the rate of 60 bbls. an hour.

South of the Voshell Pool, in McPherson County, J. E. Mabee and others' No. 1 Nickel, NE cor. SW Section 33-21-3w, found the top of the chat at 3,135 feet. Casing was cemented and drilling continued, but down to 3,150 feet there had been no showing. This test is a half mile south of production in the south extension to the Voshell Pool. The All States Oil Co.'s No. 1 Neufeldt, SE cor. SW NE Section 21-21-3w, in the south extension area of the Voshell Pool, pumped 300 bbls. of oil from the chat at 3,007-3,140 feet.

Hollow Pool Is Important

The Hollow Pool, in Harvey County, is developing into one of the major producing areas in the State. The Phillips Petroleum Co.'s No. 1 Warkingtine, NW cor. SW SW Section 20-22-3w, is estimated at 1,500 bbls. daily from the Hunton lime. The completion of this calls for two offsets. W. C. McBride, Inc.'s No. 2 Friesen, in Section 20-22-3w, drilled the cement plug at a total depth of 3,505 feet, where the well started swabbing at the rate of 60 bbls. an hour. The same company is expected to start operations for a new test in the SW cor. NW SW Section 29-22-3w, which is about a half mile south of production in the Hollow Pool.

Producers & Refiners Corp.'s No. 1 Martens, NE cor. NW SE Section 19-22-3w, which is a quarter of a mile west of production in the Hollow Pool was fishing for two bailers at 1,625 feet.

J. E. Liggett and others' No. 1, C NW NW Section 16-11-15w, Russell County, is a location on which the owners expect to start operations in a short time.

Decline in New Work

Nine new operations were started in Kansas during the past week, which is a sharp decline from previous weeks. The operations included three in McPherson County and one each in Barton, Marion, Rice, Reno, Sedgwick and Cowley Counties. The new operations reported from McPherson County were old chat producers being drilled deeper to the Viola lime horizon. The test in Rice County was a wildcat on the Chase Townsite. The Sedgwick County operation is a new well being drilled in the Eastborough Pool.

H. Gore and others' No. 3 Brothers, SE cor. NW NW, Section 35-23-11, Greenwood County, was abandoned as a dry hole at a total depth of 1,735 feet. The test was along the trend southeast from the main Seeley Pool.

Nye & Kilby's No. 2 Shaffer, CEL SE SW, Section 31-23-14, Woodson County, swabbed 165 bbls. of oil in 12 hours and is estimated at 300 bbls. a day from the sand at 1,538-77 feet.

Sheedy and others' No. 1, in the NW cor., Section 26-23-13, Woodson County, pumped 5 bbls. of oil from the pay at 1,825-34 feet with the total depth 1,886 feet.

Sinclair Prairie Oil Co.'s No. 1 Davis, SW cor. SE SE, Section 6-24-12, Greenwood County, topped the Mississippi lime at 1,795 feet, and landed the 6-inch casing at that depth. A pay horizon was found at 1,808-14 feet, and the well is estimated at 30 bbls. daily of oil and 10 bbls. of water.

A. M. Landon and others' No. 1 Smith, NW cor., Section 8-24-12, landed 6-inch casing at 1,695 feet and found the Bartlesville sand at 1,729-45 feet, where it was shot with 60 quarts and oil rose 700 feet in the hole. It was cleaning out.

Allowables Reduced

In the Johnson Pool, in McPherson County, the per well allowable from September 1 to October 1, was reduced from day to day as new wells were completed during the month. The daily pipe line nominations for the field were 500 bbls. for the current period from all wells, excepting those shut in by the last orders of the Public Service Commission. All others were authorized to produce their wells 33 bbls. per day until such time as new wells or a change in the pipe line nominations necessitates a revision. The allowable of the 15 completed wells in the field was 45 bbls. per well from September 1 to 15, and 42 bbls. per well from September 16 to 19, 38 bbls. on September 20, and 36 bbls. from September 21 to 30.

The potential production of the central western counties, Barton, Ellsworth, Rice, Rush, and Stafford, shows a decline for the first time since the area was discovered to be an oil region, about three years ago. According to the state umpire's report the potential production on October 1, was 49,291 bbls. from 48 wells. This is a decline of approximately 1,400 bbls. from the September potentials, but it is an increase of 2 new wells. The pools showing the decline in potentials are the north Stratman, in Ellsworth County, and Byers and Ploog, in Rice County.

The umpire advises that there has been no change in the pipe line nominations of the purchasing companies in the area and that operators are to continue to produce on the same basis until further notice.

The following table shows the companies with production, the wells and their potential production:

	Daily potential (bbls.)
Barton County—	
Sinclair Prairie's No. 1 Davidson	75
Derby's No. 1 Berscheidt	50
Hilligoss' No. 1 Isern	1,923
Midwest's No. 29 Scheufler	700
Ellsworth County—	
Slick's No. 1 Breford	800
Slick's No. 1 Helken	1,182
Slick's No. 1 C. Helken	1,200
Derby's No. 1 Stoltenberg	1,880
Gypsy's No. 1 Kozisek	800
Gypsy's No. 1 Stoltenberg	1,596
Gypsy's No. 2 Stoltenberg	200
Vickers' No. 1 Stoltenberg	800
Allison's No. 1 Stratman	50
Aylwards et al's No. 1 Stratman	2,492
Aylwards et al's No. 2 Stratman	1,918
Aylwards et al's No. 3 Stratman	1,082
Aylwards et al's No. 4 Stratman	2,394
Aylwards et al's No. 5 Stratman	2,198
Derby's No. 1 Stratman	974
Robertson's No. 1 Stratman	1,717
Robertson's No. 2 Stratman	1,970
Sinclair Prairie's No. 1 Stratman	128
Smith & Ash's No. 1 Stratman	1,734
Rice County—	
Muth Brothers' No. 1 Beyer	100
National's No. 1 Sherman	250
Slick et al's No. 1 Orth	1,800
Shell et al's No. 1 Ploog	1,000
Phillips' No. 1 Mezger	1,377
Phillips' No. 2 Mezger	1,247
Producers & Refiners' No. 1 Thompson	685
Producers & Refiners' No. 2 Thompson	1,620
Slick's No. 1 Mezger	886
Slick's No. 1 A. Schurr	742
Slick's No. 2 Schurr	1,062
Slick's No. 3 Schurr	1,540
The Texas Company's No. 1 West	998
Vickers' No. 1 Binger	1,380
Vickers' No. 2 Binger	347
Vickers' No. 3 Binger	100
Empire's No. 1 Heckel	816
Marileen et al's No. 1 Sharpe	170
Wesbros. Dev.'s No. 1 Macemore	1,104
Gypsy's No. 1 Steckel	150
Rush County—	
Boyle et al's No. 1 Greenawalt	50
Stafford County—	
Midwest's No. 29 Allen	1,800
Midwest's No. 6 Brock	800
Midwest's No. 11 Figger	500
Midwest's No. 36 Richardson	1,800
Total	49,291

Butler County

Empire Oil & Refining Co.'s No. 1 Houston, SE cor. SW, Section 19-26-5, an old well drilling deeper, made 80 bbls. from a total depth of 2,691 feet.

Cowley County

McNabb and others' No. 1 Morrow, NE cor. SW, Section 11-32-4, is a location. Davis and others' No. 1 Holt, NW cor. SW NE, Section 22-32-4, was drilling at 450 feet. Roth & Faurot's No. 1 Reedy, NW cor. SW, Section 32-31-8, was shut down at 50 feet. Austin and others' No. 1 Wade, C NE NE, Section 9-29-12, was drilling at 150 feet. Denton and others'

(Continued on Page 71)

Wildcat Operations in Kansas

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location—	Remarks:
Rankin's No. 1 Sooey, C SW NE Sec. 34-18-12w	Location.
Doherty et al's No. 1 Roesler, SW NE, Sec. 11-18-11w	S.D. 1,975 ft.
Smith et al's No. 1 Wilson, C NW SW Sec. 13-18-14w	Drlg. 1,930 ft.
Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w	Set liner 3,530-46 ft.; show oil; drlg. 3,605 ft.

BUTLER COUNTY

Cameron-Great Basin Oil Co.'s No. 1 Landon, C SE NW Sec. 13-28-2	U.R. 2,975 ft.
Ramsey's No. 1 Michael, SW NW NW Sec. 18-27-3	Drlg. 2,130 ft.

COFFEY COUNTY

Baker et al's No. 1 Hertig, NW SW SW Sec. 31-20-14	Drlg. 2,050 ft.

DICKINSON COUNTY

Severs' No. 1 Livingood (O.W.D.D.), SE NW, Sec. 13-13-21	S.D. 4,810 ft.

DOUGLASS COUNTY

Pure Oil Co.'s No. 1 Limb, NW SE Sec. 31-14-19	Viola 1,762-1,816 ft.; drlg. 2,023 ft.

EDWARDS COUNTY

Mid-Kansas O. & G. Co.'s No. 1 Converse, SW NE NE Sec. 30-24-18w	Drlg. 4,945 ft.

ELLSWORTH COUNTY

Buckford's No. 1 Burke, C NE SW Sec. 14-14-9w	Rig.
Viking Oil Co.'s No. 1 Satran, C NW SW Sec. 5-14-9w	S.D. 1,385 ft.
Gurley Bros. and Barnsdall's No. 1 Union Pacific, NW SW Sec. 7-14-7w	Drlg. 1,030 ft.
Phillips Pet. Co.'s No. 1 Hochman, NE NW SE Section 17-16-7w	Drlg. 2,330 ft.
Morgan's No. 1 Andrews, NE SW Sec. 3-17-8w	Drlg. 1,820 ft.
Walker et al's No. 1 Remley, SW SE NE Sec. 23-14-7w	Drlg. 3,225 ft.
R. Gear et al's No. 1 Kroboth, SE NW Sec. 12-15-10w	Drlg. 450 ft.

FINNEY COUNTY

Joe Denham et al's No. 1 Brown, S SW Sec. 16-25-34w	Rig.
National Ref. Co.'s No. 1 Wells, C SW Sec. 13-23-30w	S.D. 5,872 ft.

FORD COUNTY

Swain et al's No. 1 Henthorn, C NW Sec. 21-25-24w	S.D. 5,505 ft.

GRAHAM COUNTY

Schleimeyer et al's No. 1 Smith, SE Sec. 24-8-25w	Drlg. 2,865 ft.

HARVEY COUNTY

Liggett et al's No. 1 Davis, SW SE NE Sec. 7-24-1	S.D. 3,415 ft.

(Continued on Page 71)

SHELL

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Wood River, Ill.

Rank Wildcat May Open Field in Tyler County; Wharton County Wildcat Also Promising

By NEIL WILLIAMS
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Oct. 10.—Completion of Republic Production Co.'s No. 1 Sterne fee, in the Spurger district of eastern Tyler County, has definitely proved another productive area for the Gulf Coast. This well set 10 feet of 4¾-inch screen in sand at a total depth of 4,708 feet and was washed in through tubing and an 8 3/16-inch choke. It is estimated making between 2,000,000 and 3,000,000 feet of dry gas daily with a pressure of 1,750 pounds on tubing and 950 pounds on casing. Since then the volume has been steadily increasing with pressure, Monday, of 1,900 pounds on tubing and 1,800 pounds on casing. The gas will be used for fuel for further development to be carried on in the district by the company which owns a large block in fee. Although making only dry gas the well is believed to indicate the existence of another important field located along what is known as the "Jackson" trend. This is the first production in Tyler County, which is one of a group of counties between the Gulf Coast proper and the East Texas counties.

Interest on the Gulf Coast late in the week was divided between this well and two other wildcats, one in Wharton County and the other in the Sunshine district of southern Polk County, both of which on drill stem tests looked promising for the opening of other new fields. The former showed for only dry gas but the latter made wet gas. The Wharton County test, however, probably is the more interesting because of it being in newer territory.

This wildcat is Smith & McDaniels' No. 1 Mitchell, H.&T.C. Survey No. 8, in the El Campo district. Two tests were made, the first in sand at 3,064-3,121 feet and the second at 3,170-3,203 feet. The former showed 200 pounds pressure dry gas through a one-quarter inch choke in four minutes and the latter 300 pounds pressure through the same choke in four and a half minutes. As this is written the test is waiting orders as to whether it will be deepened or completed at its present depth.

Although showing only dry gas, the test is looked upon with considerable favor and its importance as a possible forerunner of development of oil production is recognized generally. It is on a block formerly worked geophysically by Shell Petroleum Corp. and which, after being held some time undeveloped by the latter company, was "farmed" out recently to the present operators for the test.

Located near El Campo in the western central part of Wharton County, the block is in a little developed territory. At present the only production in the county is at Boling, a salt dome in the extreme eastern part and some 25 miles from El Campo. The nearest production is at Markham, a salt dome approximately 20 miles to the south in Matagorda County.

In the Sunshine district of Polk County Dick Schwabb's No. 1 Carlton Davis, A. Viesca Survey, made a drill stem test of a broken sand and shale with an odor of oil at 4,181-4,266 feet and in seven minutes built up a pressure of 350 pounds of wet gas. Operators are preparing to set casing.

Several other wells previously have been drilled in this territory and have encountered showings of oil and gas in the Hockleyensis of the Jackson around 3,200-3,300 feet and one small well was completed but never was regarded as commercial. The present well, however, is believed to be in the Yequa formation and looks a little more promising for important production.

Republic Production Co.'s wildcat on its Spurger block in eastern Tyler County late in the week still was standing cemented with 7-inch casing seated at 4,680 feet. As previously reported, it also showed dry gas on a drill stem test of sand at a total depth of 4,708 feet with the testing tool seated at 4,675 feet. With the tool opened only one minute, the test showed for a volume estimated at 30,000,000 feet. Pressure was 750 pounds through a three-eighths inch choke.

Jasper County

Although the new wildcat gasser in the Spurger district of Tyler County is in a large block owned in fee by Republic Production Co. and in itself will not necessitate an active drilling play there in the event a field is opened, it has stimulated new interest in that section of the State including Tyler, Jasper, Newton and eastern Hardin County where a number of important new tests, previously announced, now are drilling. The latest test made known for that district is Smitherman, Neilson & Noble's No. 1 Cameron, located in the southeast corner of the Cameron Lumber Co. tract in the William Jones Survey, Jasper County. This is in an 8,000-acre block in the Jones, Gilchrist, Samuel Goode and Thomas McDonald Surveys, the south line of which block is 8 miles north of Republic's Spurger wildcat. Those operators now are moving in derrick and rig. This block and that of the Republic are only from 3½ to 4 miles distant at their closest points. Leasing also continues alive throughout the above counties, where a number of companies are steadily adding to their holdings. Considerable acreage already has been leased up there within the last several months since the development of the Conroe Field of Montgomery County, which is along the same trend.

Conroe Extension

Possibility of a 5-mile southeastward extension of the Conroe Field was seen late in the week with the picking up of the deep pay by Gulf Coast Drilling & Development Co.'s No. 1 Keystone Mills, A. S. James (T.&N.O. No. 4) Survey. This test at a total depth of only 5,009 feet is in sand showing oil from 5,005 feet. Sand and shale showing gas was topped at 4,965 feet and in a drill stem test at 4,965-95 feet, 250 pounds pressure was recorded and a joint of "gasoline" was recovered. Completion of this well as a producer will prove the field approximately 10 miles long extending in a northwesterly-southeasterly direction with a width of between 3½ to 4 miles.

The Conroe Field is assuming a position of increasing importance and calculations as to its extent are constantly being revised upward. Only the facts that the greater portion of the field and potential productive area has been placed under the control of the Humble Oil & Refining Co., which is carrying on a development program as limited as necessary offsetting permits, has prevented the field from taking a far more conspicuous place than it has.

Shallow Sand Developments

Shallow sand developments at Conroe also have been watched closely. Although no shallow wells have yet been completed showings obtained in shallow sands, which now are being passed up in the development of the lower Jackson horizon around 5,100-5,200 feet, have been regarded as important and it is likely later operators will come back for those sands. Considerable excitement was created when Showers & Moncrief's No. 1 Dunn, in the south part of the M. W. Real Survey, blew out while drilling around 1,250 feet. The well blew out of control for several hours and caught fire. The rig was skidded away and was undamaged. The well made a large amount of gas and an estimated 40,000 bbls. of water daily. When the blowout was killed, the hole was abandoned and location made 100 feet south for a second hole, to which the derrick was skidded. Southland Oil Co.'s No. 1 Cummings, Wilson Strickland Survey, also encountered a shallow sand around 975 feet showing gas but this has been passed up.

These wells are in the immediate vicinity of Humble Oil & Refining Co.'s No. 1 Dobbins, Ransom House, which passed up several shallow sands before being completed in the lower horizon. The Dobbins well is looked upon as the top of the field. The latter made no tests of the sands but it is likely a good well could have been completed in at least one of them, that one around 1,740 feet. The Texas Company in its No. 1 Moody, a half mile to the south of the Dobbins well, and Heep Oil Corp. in its No. 1 Dobbins, north offset to the Humble's Dobbins well, spent some time in looking at the shallow sands but now are going on down.

Two additional wells were reported at Conroe late in the week, these being Humble Oil & Refining Co.'s No. 9 South Texas Development Co. and No. 1 Plaeffin. The former came in flowing 52 bbls. hourly through a three-eighths inch choke from sand at 5,161 feet while the latter is estimated good for 800 bbls. at 5,060 feet. At the close of the week a half dozen wells were preparing to test and operations now are at a stage that new wells are being brought in in increasing numbers and greater regularity.

Dry Hole at Rabbs Ridge

The first dry hole for the Rabbs Ridge Field since production was opened in May, 1931, was chalked up the past week in Humble Oil & Refining Co. and Gulf Production Co.'s No. 8-A Lockwood & Sharp, which was abandoned at a total depth of 5,630 feet. This well, located on the northwest side of the field, definitely cuts off production in that direction, and except for a well on the extreme south which is in the water, is the first limit established for the immediate field, which already has been proved over an area of around 3,000 acres. Another test, however, Humble and Gulf's No. 3 Davis, located on the extreme south end, is drilling below the level at which the producing section is encountered. Late in the week it was down 5,620 feet.

To offset the dry hole, three producers were brought in at Rabbs Ridge, these being Humble and Gulf's No. 4-A F. I. Booth, No. 4-B Lockwood & Sharp and No. 2-A George. The Texas Company's No. 2 Wolters on the north end of the field is in sand showing oil, where it is expected screen is to be set.

High Island

Yount Lee Oil Co. swelled its daily potential production at High Island, Galveston County, by the completion of its No. 12 Smith flowing 1,400 bbls. daily through a one-half inch choke from sand at 5,504 feet. This is one of a series of good wells completed on that dome since that company acquired the field.

Lockport Prospect

Adding to the numerous important wildcat tests which are being started up over the Gulf Coast territory, Gulf Production Co. has made location on its Lockwood prospect in western Brazoria County for its first test there. There will be No. 1-B H. P. Lockwood, located in the Wiley Martin Survey No. 9, the check being 3,024 varas south 45 degrees west along the southeast line of the H. P. Lockwood 536 acres from the east corner and thence 241 varas northwest at right angles. This prospect, which was worked some time ago geophysically by the Gulf, is between Damon Mound and West Columbia and is looked upon as one of the most favorable areas on the coast.

Victoria County

Houston Oil Co. and Magnolia Petroleum Co. have abandoned their second joint test on what is known as their Beck block in north central Victoria County but have made location for a third test. The abandoned test is No. 1-A McFaddin, I.R.R. Survey No. 20, which was quit in heaving shale at 6,480 feet. The first test, No. 1 Conrad, T.&N.O. Survey No. 1, was quit in heaving shale at 5,290 feet. The third test is some 3 miles south of No. 1-A McFaddin and between the latter and the Conrad test.

In the Keeran district of southeastern Victoria County, Union Oil Co. of Nevada has abandoned as dry its No. 1 Keeran after going to a total depth of 6,670 feet. This company also has made location for another test, its No. 2 Keeran, located 500 feet east of the east line of the Bunte and Gulf Production Co.'s 5,000-acre block and 1,900 feet north of the railroad.

Gulf Coast Fields and Wildcats

Week Ending October 8

RACCOON BEND—AUSTIN COUNTY

Company, farm and location—	Remarks:
Humble Oil & Ref. Co.'s No. 5 J. W. Wilson, Wm. Harvey Sur., 2,380 ft. southeasterly along NE line from N cor. of tract and thence 412 ft. southwesterly at right angles	Coring sand 3,158 ft.

DAMON MOUND—BRAZORIA COUNTY

Intercoastal Oil Co.'s No. 10 Wisdom, A. Darst Sur., 440 ft. from NW line and 170 ft. from SW line of tract	Rig.

WEST COLUMBIA—BRAZORIA COUNTY

The Texas Company's No. 7 Abrams (W.O.), George Tennille Sur.	Set 24⅝ ft. of 3-in. screen 3,171 ft.; swabbing.

BARBERS HILL—CHAMBERS COUNTY

R. E. Ferrell's No. 2 Wilburn, Henry Griffith League, 315 ft. W of No. 1 in center of 45-acre tract	T.D. 3,000 ft. in shale; fishing.

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Wildcat in Sabine Parish Encourages Two Tests; North Louisiana Monopolizes Completions

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Oct. 10.—Of the numerous wildcats on test during the past week in this division, only one developed results indicating an eventual commercial producer. One other test, bailed two weeks ago with a good show of oil and gas and shut down since because of bad tubing, has all the earmarks of making a small commercial well, but further testing will determine the quantity and quality of the oil. The proven area of the Zwolle Field experienced a rather dull week, with only one new producer and no extensions to the proven territory.

In the Converse area of Sabine Parish, 10 miles northwest of the Zwolle Field, Gibson & Johnson's No. 1 Frost Lumber Co. Section 19-9-13, has been bailing from 40 to 50 bbls. daily, of 45.6 gravity oil from the hole for several days. The well also gauges 30,000 feet of gas, production coming from the chalk at 1,625 feet. This well developed about five fourbles of oil on drill stem test before casing was set at 1,548 feet, and should have made a better showing when bailed, but on drilling the plug from the 8¼-inch casing when first set, it was found to be only about 300 feet from the top of the hole. The casing was reset at the same depth, and it is probable that the bad job of cementing on the first job may have cut off some of the pay stratum. The operators, Gibson & Johnson, Inc., have not fully decided whether to operate the well from this depth as a pumper or to deepen to a potential sand pay around 3,100 feet. With the gas pressure present, the test may flow through tubing.

That the operators have confidence in that area is evidenced by the fact that they have taken over a good block of acreage north of the present test in Sections 4, 5, 6, 7 and 8, Township 9, Range 13, with the obligation to drill two tests, the first to begin by November 1, 1932. They are also rigging up on their No. 2 Frost Lumber Co., Section 15-9-13, about 3 miles northeast of the present well. This will make four tests in the Converse area, now drilling, which should prove the extent of the chalk horizon as well as the sand at 3,100 feet. The two other wells in that vicinity are Cloud & Bolin's No. 1 Bowman-Hicks, Section 26-9-13, drilling at 1,000 feet, and the C. M. F. Oil Co.'s No. 1 Aaron, Section 32-9-13, drilling at 1,975 feet.

NORTH LOUISIANA

An interesting wildcat in DeSoto Parish, Walters & Nicholson's No. 1 Guy, Section 3-11-13, has pulled faulty tubing and is resetting clean tubing with the total depth at 2,767 feet. This well has bailed considerable oil with a good gas show on several occasions, and made two or three heads of oil during the past week's testing. It is thought that with the hole washed clean and with clean tubing inserted, the well may flow, otherwise it is practically assured of making a small pumper.

In the northwestern part of Bossier Parish, Braezelle & Steckall's No. 1 Nattin, Section 15-22-14, has set 6-inch casing above 2 feet of sand encountered from 2,940-42 feet. This well also cored some sand below red gumbo, encountered from 2,942-52 feet. A test will be made of both sands as no water has showed up to date. The total depth of the hole is 3,018 feet.

Other wildcats in the North Louisiana district follows: DeSoto Parish, Jack Whitson and others' No. 1 Sanders, Section 19-11-13, drilling shale at 1,350 feet; Jackson Parish, the Southern Advance Bag & Paper Co.'s No. 4 fee, Section 19-15-3w, drilling shale 2,200 feet; Morehouse Parish, Feazel & Kalil's No. 1 Davenport, Section 28-21-6e, 3 miles southeast of Bastrop, drilling at 2,490 feet. In Natchitoches Parish, Dr. H. S. Gerson is drilling his third test on the Smith lease in Section 11-10n-8w. The two previous wells have been completed at shallow depths, less than 600 feet, making about 4,000,000 feet of gas with large quantities of salt water. Two other wildcats in this parish, the Natchitoches Petroleum Co.'s No. 1 Edenborn, Section 4-11-6w, is drilling in black shale at 1,800 feet with the top of this formation encountered at 1,710 feet. Texarkana Oil Co.'s No. 1 Clark-Morris Lumber Co., Section 23-5-6, is arranging to set 6⅝-inch casing with the total depth of the hole at 3,475 feet.

Completions

The North Louisiana district furnished all of the completions reported during the last seven-day period. A summary of results reveals two oil wells, two gas wells and four dry holes. The Zwolle Field reported only one new producer, E. F. Neely's No. 2 Ponder, Section 9-7-11, is flowing 125 bbls. daily through 2-inch tubing from 2,490 feet. Although estimated last week, W. C. Turnbow's No. 2-B Williams, Section 13-7-11, was officially completed with an initial flow of 2,000 bbls. daily through 2-inch tubing from 2,600 feet. This well caught fire during the past few days, but after burning for 24 hours was extinguished with no damage to nearby wells. The other producer was also from Sabine Parish, but from the Pleasant Hill area J. M. Bridges' No. 1 Moore, Section 5-9-12, about one-fourth mile southwest of production, is flowing 20 bbls. through 2-inch tubing and packer from 3,277 feet.

The new semiproven gas area in Caddo Parish, near Blanchard, reported another fair gas well during the week. Louana Oil & Gas Co.'s No. 2 Cushman, Section 33-19-16, gauged 7,500,000 feet with rock pressure around 1,000 pounds from a total depth of 2,758 feet. This is the second successful completion in this area for this company which has acquired more acreage with the expectation of drilling at least six more wells. The Louana Oil & Gas Co. now owns leases on more than 2,000 acres in that vicinity. The company is headed by W. E. Hall, discoverer of the Carterville Field in Bossier Parish. The other gas well was from the proven area of the Union Parish district of the Monroe Field. The Southern Carbon Co.'s No. 61 fee, Section 17-20-4e, had an initial flow of 5,000,000 feet of dry gas from 2,155 feet.

Of the four dry holes reported, three were from the Zwolle area and one was a wildcat in Concordia Parish. The latter, M. M. Stoker's No. 1 Gillespie, Section 56-8-10, encountered salt water in the upper Wilcox and was abandoned at 3,705 feet. The dry holes in Zwolle follows: Bridwell Oil Co.'s No. 1 Louisiana Long Leaf Lumber Co., Section 31-8-10, total depth 2,808 feet; E. T. Kilgore's No. 1 Pate, Section 32-8-11, dry at 2,704 feet, and Ben F. Smith's No. 2 Turner, Section 4-7-11, dry at 2,610 feet. There were also eight locations and derricks abandoned in the Zwolle Field due to lack of funds or recent offsets proving the area to be dry.

ARKANSAS

There were no developments of particular interest in Arkansas during the week. For a short period a number of wildcats began drilling and then shut down for an indefinite time. The most active area is in Miller County near Fitzwater's No. 1 Beck in Section 33-15-26. This test is still trying to make a commercial well after developing 500 feet of oil and 1,500 feet of salt water from 2,935 feet. The hole has been deepened to 2,954 feet and reported to have encountered another streak of sand. It is also reported that 4½-inch casing is being run into the hole at 2,949 feet with the expectation of cutting off the salt water from the first show and making a test of the second sand. The operators of this test are very close with their information and no definite data can be obtained.

Other wildcats in this State follow: Cleburne County, Frank S. Craver and others' No. 2 Doniphan Lumber Co., Section 34-11-9, drilling at 730 feet; Drew County, Co-operative Development Co.'s No. 1 Ogles, Section 35-13-5, coring shale and chalk at 3,311 feet; Little River County, Harrell-Stevens and others' No. 1 Taffee, Section 25-12s-32w, are arranging to resume operations from red shale at 2,968 feet. This test cored salt water sand from 2,917-25 feet, and it is understood the operators will not drill much deeper before abandonment unless an oil bearing sand is encountered. In St. Francis County, the Kentucky Oil & Gas Co.'s No. 1 Britton, Section 1-4-1, is drilling in shale and gumbo at 3,350 feet. H. H. Helms' No. 1 Davis, Section 31-16-14, Union County, has been junked at 2,969 feet with some drill stem in the hole. The derrick has been skidded over 25 feet north and 100 feet west and the crew is rigging up on the second test.

Daily Average Runs

The fields of North Louisiana and Arkansas had a net decrease of 55 bbls. daily in average runs during the past week. The former netted an increase of 315 bbls. due to further flush production in the Zwolle Field, but Arkansas showed a decline of 370 bbls. The daily average runs from the several pools were:

NORTH LOUISIANA	
Caddo, light	5,175
Caddo, heavy	1,885
Cotton Valley	710
DeSoto-Red River	1,840
Elm Grove	410
Haynesville	4,210
Holly	255
Homer	2,720
Pleasant Hill	240
Sarepta-Carterville	830
Urania	3,720
Zwolle	8,400
Total North Louisiana	30,415
Total previous week	30,100
Increase	315

ARKANSAS	
Champagnolle	1,715
El Dorado	2,940
Lisbon	445
Nevada	900
Smackover, light	2,860
Smackover, heavy	23,626
Stephens	50
Urbana	1,485
Total Arkansas	34,025
Total previous week	34,395
Decrease	370
Total both states	64,440
Total previous week	64,495
Decrease	55

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

AVOYELLES PARISH

Company, well, farm name, section and block— Remarks:
T. J. Woodley, tr.'s No. 1 Thompson & Koltz, 2,640 ft. E. 200 ft. S, NW cor., Sec. 11-2n-5e..... S.D. 150 ft; repairing rig.

BEAUREGARD PARISH

DeRidder Development Co.'s No. 1 McMahan, 155 ft. S, 160 ft. W NE cor. NW, Sec. 33-2s-9w ..... S.D. 1,365 ft.

BOSSIER PARISH

Breazelle & Steckoll's No. 1 Nattin, C SW NE, Sec. 15-22-14 ..... S.D. 3,018 ft.

CADDO PARISH

Caddo-Prairie Dev. Co.'s No. 1 Nichols, 660 ft. N, 400 ft. E, SW cor. NE SW, Sec. 10-22-15..... Location.
Louana O. & G. Co.'s No. 2 Cushman, 250 ft. N and E, SW cor., Sec. 33-19-16..... Set 6-in. 2,740 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4 ..... S.D. 3,712 ft.

CLAIBORNE PARISH

Leue Oil Co.'s No. 1 Kinder, Sec. 2-21-7 .. .. Rigging up.
W. E. Rembert's No. 2 Hunt, Sec. 18-23-8..... Set 10-in. 100 ft; drlg. 705 ft.
Robertson & Aurand's No. 1 Smith, 200 ft. S and E, NW cor. SE NE, Sec. 8-21-7..... Rigging up.

CONCORDIA PARISH

M. M. Stoker et al's No. 1 Gillespie, Sec. 56-8-10.. ..... S.W. and abd. 3,705 ft.

DE SOTO PARISH

Coker et al's No. 1 Boone, 200 ft. N and W, SE cor. SW NW, Sec. 12-10-11 ..... S.D. 60 ft.
Donley & Chastain's No. 1 H. Smith, 325 ft. W, 400 ft. N, SE cor., Sec. 31-14-15 ..... S.D. 2,470 ft.
Honeycut O. & G. Co.'s No. 1 Porter, 423 ft. S, 414 ft. W, NE cor. NW NE, Sec. 26-12-13..... Set 10-in. 121 ft; drlg. 400 ft.
S. A. Guy's No. 1 Dowling, 469 ft. E, 382 ft. S, NW cor. NE, Sec. 31-14-14 ..... S.D. for wtr. 3,068 ft.
E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 30-13-15..... Coring 4,140 ft.
DeSoto Dev. Co.'s No. 1 Nickey, Sec. 7-13-12..... Partly rigged up and S.D.
G. C. Smith et al's No. 1 Williams, 330 ft. N and W, SE cor. Sec. 30-12-12 ..... S.D. for fuel 1,255 ft.
E. J. Stanberry's No. 1 Naborton O. & G. Co., Sec. 32-13-11 ..... S.D. for wtr. 800 ft.
Walters-Nicholson tr's No. 1 Jim Guy, Sec. 3-11-13 . S.D. 2,767 ft.
Warren & Craig's No. 1 J. A. Wagner, 150 ft. S and W, from C, Sec. 5-12-14..... Rigging up.
Jack Whitson's No. 1 Sanders, 330 ft. N and E, SW cor., Sec. 19-11-13 ..... Drlg. 1,350 ft.

GRANT PARISH

O. Robichaux's No. 1 T. M. Bradford, 1,870 ft. E, 314 ft. S, NW cor., Sec. 16-9n-1e .. .. Derrick.

JACKSON PARISH

Hodge-Hunt Lbr. Co.'s No. 4 fee, SW SW, Sec. 19-15-3w Drlg. 2,200 ft.

(Continued on Page 78)

Nine Completions in the Central West District; Marked Improvement in Owensboro Area

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Oct. 10.—In the old Lima Field the Wiser Oil Co.'s No. 9 well on the Grant Geiger farm, Section 12, Cessna Township, Hardin County, is reported with an initial of 6 bbls. the first 24 hours from a depth of 1,375-98 feet. In Lucas County, Monclova Township, E. J. Davis and others have a fishing job at 300 feet on the Charles B. Holloway farm, Section 7, and Ross & George are drilling a second test on the Solomon C. Betts farm, Section 8, same township, and down about 250 feet.

N. H. Pember and others are shut down on the E. and R. Wagoner farm, Section 27, Jackson Township, Wood County, at 1,462 feet. O'Brien and others are also shut down at 1,568 feet on the C. J. Rice farm, Section 17, Ballville Township, Sandusky County. Green and others shut down at 1,531 feet on the Mary McElhaney farm, Section 15, Hopewell Township, Seneca County. Murphy & Sons' No. 4 C. D. Knepper farm, Section 11, same township, is drilling around 800 feet. McPherson and others' No. 4, on the Frank Fox farm, Section 11, same township, is drilling near the top of the Trenton lime. Industrial Oil & Gas Co. is drilling at 1,430 feet in No. 2 on the H. W. Hunker farm, Section 2, same township. F. W. Keiner's test on the G. C. Nighswander farm, Section 14, Liberty Township, Seneca County, is reported close to 1,400 feet.

Montgomery and others are drilling around 1,000 feet on the Frank Miller farm, Section 31, Rice Township, Sandusky County. Harpster and others are shut down at 1,350 feet on the L. G. Beis farm, Section 11, Crawford Township, Wyandot County, and Ridge Oil & Gas Co. is spudding on the G. O. Hiles farm, Section 7, same township. Bert Sheldon is drilling at 350 feet on the George Schwemmer farm, Section 31, Blanchard Township, Hardin County.

Some excitement prevails in Wyandot County, in the Lima Field, over the bringing in of an unusual producer for late years in that county, which is likely to bring additional drilling. The new well has been estimated at 1,000 bbls., but no doubt is far overestimated. It was drilled by Jones and Coyle, on the Dr. J. Craig Bowman farm, Section 28, Crane Township. It is to the northwest of upper Sandusky. The flow amounted to 25 bbls. an hour, but should show a production around 200 bbls., possibly better. Wells in this territory many years ago produced a large amount of crude for a period, but did not hold up. Very few of the wells of that time are now pumping, many going down to from 1 to 5 bbls. within a few months.

CENTRAL OHIO

Nine scattered completions were reported from the Central Ohio Field, one being a producer, one dry and seven were gas wells. The oil well was drilled by H. E. Perkins on the D. S. Snyder farm, Lot 7-A, Newcastle Township, Coshocton County. When the Berea sand was tested it failed to show production at from 983 to 988 feet, but the test was drilled deeper, being completed at from 3,286-3,300 feet, and after given a shot produced an initial of 47 bbls. The dry hole was drilled by Walter Wickens on the E. B. Drain and others' land, Section 13, Warren Township, Athens County, and was drilled into the Maxburg stray sand from 1,051-1,100 feet. There was a showing of oil and gas as well as water at 1,100 feet. It has been abandoned. In the same county, I. C. Robinson drilled a fair gas well in a second test on the D. C. Dickson farm, Section 13, Lee Township, at 306 feet.

In Stark County, Jackson Township, the Fulton Oil & Gas Co. drilled in an excellent gas well on the Henry C. Rudy farm, Section 4, in the Clinton lime from 4,162 to 4,202 feet. East Ohio Gas Co. also drilled in a nice gas well on the L. and M. Reed farm, Section 12, same township, in the Clinton from 4,369-89 feet.

Belmont County reports one completion by A. C. Peters and others on the Stephens-Knox farm, Section 27, Somerset Township, being a light gas well in the Berea sand from 1,852-64 feet, and in Union Township, same county, Bradfield and others' test on the Shutway-Murphy farm, Section 35, is a fair gas well in the Maxon sand from 1,013-15 feet. A. C. Peters and others experienced some trouble with their No. 2 on the Jefferies and others' farm, Section 21, same township. At a depth of 1,500 feet the casing parted at 1,100 feet, and the hole was plugged, and the rig skidded.

In Guernsey County, Oxford Township, J. F. Roch drilled an average gas well on the Jennie Rose farm, Section 35, in the Berea sand from 1,386-93½ feet.

In Meigs County, the Ohio Fuel Gas Co.'s No. 1 on the G. R. Michael farm, Section 31, Bedford Township, is a gas well.

New Development

In Ashland County, Faulkner & Phelps are drilling No. 6 on the Guy Humm farm, Section 29, Mohican Township. Moore and others are shut down in their No. 5 on the George W. Black farm, Section 34, same township. Eddy and others are still shut down at No. 4 on the Edward Gardner farm, Section 17, Perry Township, same county, at 250 feet. Hulse & Kundtz have a rig on the Clare Fraunfelder farm, Section 10, Montgomery Township, and Stewart and others' No. 4 on the Herbert Austen farm, Section 30, Perry Township, same county.

In Lorain County, McMillen and others are drilling around 2,250 feet on the Niels Poulsen farm, Section 15, Carlisle Township. Same parties are building a rig on the Frank Kovarik farm, Lot 95, Eaton Township. C. J. Minor is shut down at 2,305 feet on the George Myers farm, Lot 41, Ridgeville Township, same county. Ramage & Willis are reported at around 1,500 feet on the Francis E. Moran farm, Lot 94, Eaton Township, same county.

In Fairfield County, City Natural Gas Works has a rig in for No. 3 on the William Hartman farm, Section 26, Pleasants Township, and is drilling No. 2 on the Nellie C. Hummel farm, Section 35, Berne Township. In Rush Creek Township, Blume Oil & Gas Co. is drilling No. 3 on the J. J. McCandlish farm, Section 26, and Charles Blume and others are drilling No. 1 Francis E. Nye farm, Section 35.

In Coshocton County, Perry Township, Murphy and others have a rig on the Ward Little farm, Section 17, and the Preston Oil Co. is drilling on the F. H. Bonaker farm, Section 6, same township.

In Licking County, H. E. Perkins is drilling on the Charles M. Babcock farm, Section 14, Fallsburg Township, and the Wehrle Gas Co. is drilling on the Milton Parr farm, Section 11, Franklin Township, same county.

In Muskingum County, Brush Creek Township, the Fritz Oil & Gas Co. made a location for No. 3 well, on the Edward Middleton farm, Section 10, and the Ohio Fuel Gas Co. is drilling on the Carrie Staker farm, same section. William Cline and others are drilling No. 1 on the Howard L. Doyle farm, in Clay Township, same county.

In Athens County, I. C. Robinson is drilling a second test on the Alvin D. Cline farm, Section 13, Lee Township. Chestmar Oil & Gas Co. is drilling on the Thomas E. Dickson farm, in fractional Section 4, Berne Township. Kepple and others are drilling No. 9 on the Paul F. Weber farm, Lot 1,099, Wesley Township. Anderson and others are drilling on the Jacob M. Vickers farm, Section 32, Warren Township. Gross-Freebault are drilling Nos. 3 and 4 on the Ida L. Weekly farm, Section 35, and the Riverside Gas Co. has a rig up for No. 3 on the T. B. Miller farm, Section 36, Decatur Township.

Stark County

In Stark County, Jackson Township, the East Ohio Gas Co. is drilling No. 1 on the Frank S. Seil farm, Section 24. Kime and others have a rig in for No. 3 on the Charles A. Oberlin farm, Section 10. Brendall & Co. have a rig on the Robert Klein farm, Section 24, and made a location for No. 9 on the Lake Cable Co.'s land, Section 22, same township. In Plain Township, same county, the Plain Natural Gas & Heating Co. has a rig on the Levi M. Stoner farm, Section 20. Brendall Producing Co. has a rig up on the Diamond Portland Cement Co.'s land, in Section 31, Marlboro Township, same county.

In Belmont County, Warren Township, Shay-McMullen Co. has a rig up for a second test on the Orris Lucas (David W. Lallathin) farm, Section 28. In Union Township, same county, the O. K. Oil & Gas Co. is drilling No. 2 on the Alice M. Adams farm, Section 29. Same company has a location on the J. T. Murphy farm, same section, as well as for No. 2 on the E. E. Brown farm, Section 35, same township.

The East Ohio Gas Co. is reported close to 4,000 feet in No. 6 T. K. Harris farm, Section 26, Jackson Township, Stark County, and the same company's test on the Hinkle farm, Section 12, same township, is drilling around 2,600 feet. Same company is reported shut down at 300 feet in No. 4 on the Howard Fawcett farm, Section 17, same township. This company is spudding No. 1 on the Frank S. Seil farm, Section 24, Jackson Township, same county.

Morse Oil & Gas Co. is drilling around 2,500 feet on the John E. McCamey farm, Lot 3, Gustavus Township, Trumbull County. Wittmer Oil & Gas Co. is close to 3,000 feet on the H. G. Reibel farm, in Lot 90, Farmington Township, same county. Same company has a rig on the E. and E. Stover farm, Lot 46, Bristol Township, same county.

Brendal Production Co. is getting close to the sand on the W. and C. Reikowski farm, Section 25, Jackson Township, Stark County, the last report showing the drill at 4,325 feet. Nichter and others are shut down awaiting a wire line on the H. Schriner farm, Section 18, Plain Township, Stark County. Curry & Dewalt's test on the J. and O. Schweitzer farm, Section 1, Osneburg Township, is drilling in the sand, but not completed.

Marietta Development Co. is spudding on the William E. Kitchen farm, Section 2, Monday Creek Township, Perry County. Bragg & Beatrice are drilling No. 9 on the John Holden farm, Section 22, Monroe Township, same county.

City Natural Gas Works of Lancaster is drilling on the Marshall Orendorf farm, Section 30, Marion Township, Hocking County, close to 1,800 feet. Bailey and others are around 1,300 feet on the Charles L. Bobe farm, Section 12, Columbia Township, Meigs County. Thomas and others are drilling around 200 feet on the Athens Pomeroy Land & Coal Co. tract, Section 33, Salisbury Township, same county, also around 300 feet on the William L. Hysell farm, Section 27, same township. Star Mills Co. is having trouble with casing at 391 feet on the Mena E. Karr farm, Section 11, Sutton Township, Meigs County.

Curtis & Eaken's No. 6, on the Broadsworth farm, Lot 21, Chatham Township, Medina County, is reported a dry hole at 375 feet, as no pay was found in the Berea sand.

KENTUCKY

The Owensboro Field of Western Kentucky shows an improvement in development work and indications are the drill will be kept busy until cold weather sets in. The week shows 18 completions, with an initial of 460 bbls. and 9 dry holes. Ohio County leads with 12 completions, 305 bbls. initial production and 7 dry holes. Daviess County had 5 completions, with an initial of 140 bbls. and 2 dry holes, while McLean County had one well with an initial of 15 bbls.

The best completion was made by Goldberg and others in No. 3 on the Roy Owens farm, in the Barretts Hill Pool, in Ohio County, in the northeast corner of the lease, which had an initial of 200 bbls. Same firm drilled in a 20-bbl. well 600 feet from the south line and 200 feet from the east line of the Hudson farm, in the same pool.

L. C. Young's No. 4 well, in the southeast corner of the Allen farm, in the Barretts Hill Pool, in Ohio County, while No. 5 well, 400 feet from the north line and 200 feet from the south line of the same farm, produced an initial of 40 bbls.

Creek Drilling Co.'s No. 4 well, in the northwest corner of the Smith farm, in the Cave Hill Pool, in Ohio County, came in a dry hole, as did its No. 5 in the southeast corner of the same farm.

Cumberland Petroleum Co.'s test on the James Willis 100 acres, in the Haynesville Pool, Ohio County, was dry in the Jett, Jones, Barlow and Bethel sands, but there was a light showing of gas in the Jackson sand.

Clark, Snyder and others' test, 1,000 feet from the south line and 200 feet from the east line of the Arnold Howard farm, 2 miles north of Fordsville, in Ohio County, was dry at 402 feet. Morrison and others' test in the northwest corner of the Floyd Keown farm, near Wesley Chapel Church, same county, was a dry hole. Fletcher and others found a dry hole on the R. I. Miller farm, same county.

Creek Drilling Co.'s second test in the northeast corner of the Hartt farm, in the Barretts Hill Pool, Ohio County, produced 15 bbls. initially.

Daviess County

In Daviess County, S. A. Cobb's second test on the James Tinsley farm, near

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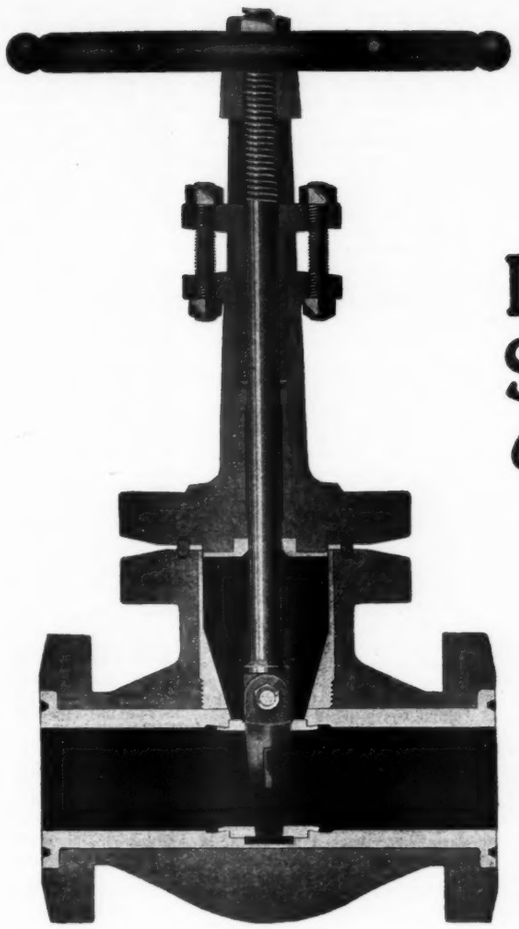

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Pleasant Ridge, produced an initial of 100 bbls., and will bring about additional test work in that area. Fred Hupp drilled a dry hole in No. 4 in the northeast corner of the Dell Salmon farm, in the Red Hill Pool. S. M. Sherman's second test in the southeast corner of the J. T. Mayfield farm, in the same pool, produced 10 bbls. initially. Hupp, Duff and others' No. 6 well, 959 feet from the south line and 150 feet from the west line of the Ace Bratcher farm, in the Cane Run Pool, same county, produced an initial of 30 bbls. at 730 feet. Creek Drilling Co.'s test, 800 feet from the north line and 150 feet from the west line of the Dr. A. Kirk farm, in the Habit Pool, in Daviess County, was reported dry at 936 feet.

In McLean County, Snowden-McSweeney Co.'s test, 200 feet from the north and south lines of the Elmer Himes farm, in the Maxwell Pool, is reported good for 15 bbls. initially.

In Hancock County, H. C. Smith's No. 2 on the John Smith farm, in the Pellville Field, is reported dry.

A report from the Albany area of Clinton County, in the southern part of Kentucky, is that Moore and Jones drilled in a 15-bbl. producer, on the Pickens farm, near Browers Crossing, at a depth of 400 feet.

Miller Brothers report a rig on the Vanmeter farm, west of Meredith, in Grayson County. C. E. Cornelius has a well drilling on the Poney White farm, near Meredith, south of Litchfield, same county.

INDIANA

Southern and southwestern Indiana are attracting much attention at this time, owing to the good shallow sand wells being brought in. Perry County looks inviting to the operators not alone from this county but from the Owensboro Field of Kentucky. Near the town of Bristow, in Perry County, Charles C. Taliaferro, Jr., geologist, brought in a test on the Andrew Peters farm, to the north of Bristow, that is said to show an initial of 100 bbls. at a shallow depth of 280 feet, and S. M. Hughes is drilling a test on the Lasher farm, just northeast of Brisco.

In Clark Township, Perry County, Conyers & Bugg's No. 7 on the Frank Cassidy farm, NW Section 30, produced an initial of 1 0 bbls. Koerner Oil Co. drilled a dry hole on the James Thiery farm, NE Section 17, same township, and in the north part of the county. Dr. C. C. Taliaferro, Jr., drilled a duster on the Rose Conen farm, NW Section 19, Troy Township, same county, at 825 feet.

Knox Engineering Corp.'s test on the L. W. and E. F. Gudgell farm, NW Section 23, Columbia Township, Gibson County, showed 1,300,000 feet of gas at a depth of 1,472 feet.

Tressler, Moore and others' No. 1 on the Mary McCain farm, Section 18, Washington Township, in the Alford Pool, produced 2,500,000 feet of gas.

Wyman and Brown drilled a gas well good for 500,000 feet on the Willis Bradbury farm, in Curry Township, Sullivan County.

LIGHT OIL FIELD IN BORNEO

NEW YORK, Oct. 8.—British Malayan Petroleum Co. (Royal Dutch-Shell) has discovered a new light oil pool, yielding crude with gasoline content of 33 per cent, in the State of Brunei, British Borneo. The pool was brought in at a depth of 5,280 feet, the discovery well flowing approximately 1,300 bbls. daily under a high gas pressure. Previous to the deep test, the company brought in a number of flowing wells in the shallow sands in the area.

H. H. KING DIES

Henry Holdship King, 93 years old, retired business man and Civil War veteran and a member of the Colorado bar, died October 3 in his home at Pittsburgh, Pa. He was a member of the first oil exchange in Pittsburgh, organized shortly after the Civil War, and was early engaged in the oil business in Pittsburgh and in Philadelphia under the firm name of Waring & King.

Pennsylvania Production 10,000 Bbls. Excess; Eighteen Completions in Eastern District

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Oct. 10.—Although straining the resources of the small independent producer who has been curtailing throughout the year, at present producing but 70 per cent of his potential, the crude price is still over 20 cents higher than the low of 1931 which was prior to any attempt at curtailment. Due to the decline in runs to stills, Pennsylvania Grade production is over 10,000 bbls. in excess of consumption, which is daily being added to tankage.

Completions were considerably higher during the week and, in spite of a high total of 5 dry holes, there were 10 gas wells and 2 small producers added to the totals. None of the wells was large and they covered a scattered area.

SOUTHEAST OHIO

Two gas wells and one small producer together with four dry holes was the total of the work completed in Southeast Ohio. The activity covered six counties.

In Ashland County, C. O. Moore completed the only producer. It was a second test on the George Black farm in the NW Section 33, Mohican Township, and was completed at 814 feet, the Berea sand. It will make a small pumper.

In Columbiana County, George B. Dolby completed a small gas well on the James F. Baker farm in Rodgers Village, Middleton Township. It was completed in the Berea sand at a depth of 700 feet and is good for about 25,000 feet a day which will be used in the village. The other gas well was in Section 8, Lawrence Township, Washington County, where J. T. Campbell drilled his No. 5 on the Wilson Martin farm deeper from the Keener sand down to the grit, to a depth of 1,692 feet. From that formation it is making about 100,000 feet a day initial.

In Medina County, E. R. Edson & Son Co. drilled No. 5 on the D. M. Geisinger farm, Tract 9, Lot 9, Chatham Township, through the Berea grit to a depth of 452 feet, but it was a dry hole. In Jefferson County, Charles A. Kelly and others drilled a second test on the Ella E. Baxter farm, SE Section 29, Salene Township. It was a dry hole at a depth of 930 feet, the Injun sand, but had a show of oil, natural. There was a great amount of salt water to handle.

In Noble County, B. E. King drilled No. 8 on the L. R. Crum farm, NW Section 7, Enoch Township. It was a shallow well at a depth of 255 feet and proved the Buell Run sand dry at that depth. Another dry hole was the test of J. E. Ripley and others on the A. H. Barlow farm, NE Section 19, Aurelius Township, Washington County. It was drilled in the 700-foot sand, a depth of 1,110 feet and there was no show of oil or gas.

WEST VIRGINIA

Drilling was retarded in many districts by a lack of water which assumed drought proportions in many districts and the worst in recent years. In spite of it, seven gas wells and one producer were completed in West Virginia.

In Gilmer County, the only producer was the test of A. E. Ellis and others, successors to Frank Golden and others, on the H. E. Engle heirs farm in DeKalb district. It was drilled in Maxon sand and is showing for about 8 bbls. a day.

Gas Wells

In Calhoun County, F. F. McIntosh completed No. 4 on the J. G. Riddle farm in Lee district. It was drilled in the Injun sand to 2,245 feet and is rated as a small gas well.

In Kanawha County, Marshall and Price are drilling No. 8 on the Goshorn and others tract in Elk district. At 570 feet the Gas sand was struck and at 655 feet a flow of gas was met which is gauged at about 450,000 feet a day. The bottom of this sand was found at 660 feet. The well was shut down and a test is being run on the gas.

In Lincoln County the Woodall Gas Co. completed No. 3 on the James Walker Adkins farm in Union district, which is showing for a fair well. It was completed at a depth of 2,306 feet and is rated in excess of 300,000 feet a day.

In Wayne County three wells were completed. In Lincoln district the Wayne United Gas Co. completed its No. 40 on the Wilson heirs' farm in the Big Lime sand at a depth of 1,720 feet. It is a small gas well. In Stonewall district, the same operators completed two wells both on the Hoard Baldwin farm. No. 52 was completed at a depth of 3,067 feet, the Brown shale, and is showing for slightly in excess of 200,000 feet a day. Its No. 53 was drilled to a depth of 3,025 feet, the same formation, and is a much smaller well.

In Wetzel County, Null and Morehead completed their No. 5 on the W. G. Snodgrass farm in Church district at a depth of 3,213 feet, the Bayard sand. It will make a gas well.

Drilling in West Virginia

Lincoln and Cabell Counties are now the most active in West Virginia. Among the new work in those districts, in Sheridan district, Lincoln County, the Woodall Gas Co. has started drilling on the Calvary Lunsford farm. Drilling in other districts of that county include C. McGhee and others on the A. L. Mullens farm in Jefferson district, which has reached 1,750 feet; and R. H. Adkins and others on the J. O. Elkins farm, drilling at 1,200 feet. In Union district, R. H. Adkins has reached 1,400 feet in a second test on the Golza Bragg farm.

In Cabell County, R. H. Adkins and others have made a location on the Mary and Alfred Williams farm in McComas district. In Guyandotte district, the test of J. W. Ramsey & Son on the Harvey Taylor farm has reached a depth of 1,100 feet. In this district, C. C. Wolfe is drilling two wells, one on the C. H. Freeman farm, which has reached 2,650 feet, and the other on the Ben Lomond Land Co., No. 4, which is in the sand but fishing for the tools at a depth of 2,983 feet. In Barboursville district, the Merritt's Creek Gas Co. has its test on the William Riggs farm down to 1,100 feet. T. M. King, trustee, is down for casing in his test on the Barboursville Clay Products Co. lease at a depth of 1,550 feet.

In Ritchie County there is some new work. In Clay district, Ed Moyers is moving in tools on the Ola M. Mullens farm. In Grant district, Russell Morris and others have made a location on the J. E. Hardbarger farm. In the same district, J. G. Charter has made a location on the J. W. Herbert farm. In Murphy district, the Southern Oil Co. has reached 1,625 feet on the Frederick Lemon heirs farm.

SOUTHWEST PENNSYLVANIA

One completion and one dry hole was the total work reported in the Southwest Pennsylvania Field. The completion was a small gasser in Adams Township, Butler County, where Gottman & Co. completed a test on the S. Grubbs farm in the Gas sand at a depth of 1,263 feet. It is a very light well. In Greene County, the Dunkard Oil & Gas Co. drilled its old test on the Harry Lemons farm in Springhill Township deeper to a depth of 3,389 feet, the Fifth sand. It proved dry at that depth and will be returned to the 30-foot sand, which was productive.

In Springhill Township, Greene County, James H. Null and others are drilling a second test on the Elizabeth Rice farm which is now down 300 feet. The Duquesne Gas Co. is past the 2,050-foot mark in its test on the G. M. and W. H. Scott farm, Center district.

In Washington County, several new rigs are up or building. In Mount Pleasant Township, Campbell & Co. have a rig standing on the J. S. Campbell farm. In Amwell Township, a recent development, the Carnegie Natural Gas Co. is building a rig on the Mrs. Menzor farm. In Hanover Township, Reed & Co. are rigging up on the W. C. Arno'd farm. In the same township, G. Rendall & Co. are rigging up on the N. N. Arnold farm.

Wildcats

Very little change was noted in the status of the tests drilling outside of production in the lower eastern fields. In Southeast Ohio E. E. Grimm and others' test on the E. E. Knowlton farm, Section 10, Independence Township, Washington County, has resumed drilling after building a new rig and running a deep string of casing.

In West Virginia, the Benedum & Trees test on the Pocohontas Coal Co. tract in McDowell County, Big Sandy district, remains shut down but will be drilled deeper.

In Virginia, Benedum & Trees are approaching 2,500 feet in their test on the Clinchfield Coal Co. lease in Russell County. In Wise County, their test on the I. Kaufman farm is making slow progress drilling in a hard formation. The depth is slightly beyond 2,100 feet.

Elk Hills Will Have Big Ultimate Output

The ultimate production of oil in the Elk Hills region in California is estimated at 400,000,000 bbls., the Geological Survey of the Department of the Interior predicts in a study on the geology and oil resources of the area just made public.

The field, which was opened in 1919, had produced about 119,600,000 bbls. up to the beginning of this year, from 4,879 acres.

"To judge from the surface structure and the correlation between surface and subsurface structure in the eastern field and from the records of scattered wells in the undeveloped areas, 18,690 acres is a conservative estimate for the extent of probable oil-bearing lands in the Elk Hills," says the report.

"It is estimated that the ultimate production of oil recoverable by methods now in use in this area is 400,000,000 bbls. for the entire Elk Hills. This amount could be increased by improved methods of extraction, unless the oil sands are damaged by improper development."

Statement of the Ownership, Management, Etc., of
THE OIL AND GAS JOURNAL
October 1, 1932

(This statement is published in compliance with the Act of August 24, 1912.)

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Known bondholders, mortgagees and other security holders holding 1 per cent or more of the total amount of bonds, mortgages or other securities: None.

JOHN M. EGAN,
General Manager.

Sworn to and subscribed before me this 8th day of October, 1932.

H. R. BARNETT,
Notary Public.

My commission expires October 3, 1933.

Continued Activity in the Rocky Mountain Area; South Dakota Wildcat Shows Warm Water

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Oct. 10.—The Texas Company has completed its No. 3-A State, in the Lea Pool, in southeastern New Mexico, and swabbed 258 bbls. in 12 hours. One location was made in the Hobbs Pool by the Midwest Refining Co. The Humble Oil & Refining Co. has introduced three 8-hour shifts in its Hobbs operations. Heavy rains delayed New Mexico operations. W. R. Ramsey's test in northeastern Colorado is running 415 feet higher than Greasewood, based on the bottom of the Timpas lime. The Ohio Oil Co. will go to the Dakota in its No. 1 Butters. Some activity is being shown in the Hiawatha district in Moffat County and the California Co.'s test on the Rangely Dome is still coring at 6,200 feet.

The Midwest Refining Co. has sold its Cat Creek and Kevin-Sunburst holdings in Montana to the Continental Oil Co. in exchange for the latter's holdings in Elk Basin and Grass Creek. One new operation was reported in Crook County.

In Montana, attention is centered in two wells to the southwest of the Cut Bank gas field, both of which are nearing the objective. One location in this district was reported. The Ohio Oil Co.'s No. 8 Caldwell, in Dry Creek, gauged 495 bbls. through a half-inch choke. One well was abandoned in Petroleum County and a new operation is starting in Yellowstone County.

A South Dakota wildcat had a dose of warm water.

The Ohio Oil Co.'s test in Washington continues to show shale gas.

The Ramsey Petroleum Co. will drill a wildcat in southern Utah.

NEW MEXICO

Lea County

The first completion in the Lea Pool in more than a year was reported this week in The Texas Company's No. 3-A State, C Lot 2, Section 2-21-33, a little less than half a mile northwest of the company's No. 2-A State, and three-quarters of a mile southeast of the company's No. 1 Lynch. The total depth is 3,783 feet and the top of the pay was encountered at 3,735 feet. It swabbed 258 bbls. in 12 hours and is rigging up to pump. The Texas Company's No. 1-B Lynch, C SW NW, Section 34-20-34, half a mile to the northwest of its No. 1 Lynch, is drilling at 787 feet in the red beds.

One new location was reported in the Hobbs Pool in Midwest Refining Co.'s No. 29 State, C SW NW, Section 10-19-38, in the southeastern part of the field. Cellar has been completed.

Humble Oil & Refining Co.'s No. 1-B Bowers, NW cor., Section 29-18-38, is drilling at 1,550 feet in the red beds after setting 15½-inch at 235 feet with 225 sacks. It spudded September 23. The Humble company instituted three shifts of eight hours each in drilling this well, the first time that practice has been adopted in the Hobbs district.

The Shell Petroleum Corp.'s No. 3-B McKinley, SW cor., Section 20-18-38, is drilling at 1,450 feet in the red beds. The 12½-inch was cemented at 223 feet with 200 sacks. Gypsy Oil Co.'s No. 2 Grimes, C SE NE, Section 33-18-38, is drilling at 1,609 feet in anhydrite. That formation was topped at 1,606 feet. Skelly Oil Co.'s No. 1 McKinley, SW NW NW, Section 20-18-38, cemented 9⅝-inch on bottom at 2,796 feet with 500 sacks. It topped the salt at 1,725 feet. Midwest Refining Co.'s No. 11 Byers, C NE NW, Section 3-19-38, is redrilling after cementing back 700 feet from 1,633 feet to straighten.

Western Drilling Co.'s No. 1 State, NE cor. SE, Section 13-17-36, in the Lovington area, is drilling at 2,600 feet in salt. It topped the anhydrite at 1,955 feet and the salt at 2,090 feet.

Eddy County

Flynn, Welch & Yates' No. 63 State, SE cor. NW, Section 10-19-28, Artesia area, which was reported good for 10 bbls. per day at a total depth of 2,178 feet, will shoot the sand and test.

Most of the drilling wells in this district were shut down this week on account of heavy rains which made the roads impassible. W. A. Scott's No. 1 Kaiser, NW SE, Section 7-18-27, is shut down at 1,259 feet in white lime, and Finley, Woods & Brainard's No. 5 Brainard, C NW SW, Section 5-18-27, is shut down at 450 feet in gypsum. Leonard & Levers' No. 8 State, C SE, Section 21-17-29, Jackson district, is drilling at 1,800 feet in lime and red beds. R. Spearow and others' No. 1 McClelland, SW NW NE, Section 22-22-23, west of Carlsbad, is drilling at 450 feet in lime.

Chaves County

R. D. Compton's No. 1 Emerson, SW cor. SE, Section 20-10s-24, Roswell district, has mudded 8¼-inch on bottom at 899 feet and is cleaning out to test shutoff.

DeBaca County

Landowners Oil Co.'s No. 1 McAdoo, SW cor. NE, Section 16-1s-27, Buffalo Creek, is shut down at 5,126 feet. It had some gas at 5,114 feet in a lime break and a show of oil at 5,120 feet.

San Juan County

Southern Union Gas Co.'s No. 6 Angel Peak, NW cor. NE, Section 11-28-11, Kuntz Canon district, shut down at 2,300 feet while crew went to the same firm's test in Colorado to run and cement casing. R. C. Oswell's No. 3, NE NE, Section 33-30-11w, near Aztec, is drilling after lowering casing to 900 feet for a water shutoff.

COLORADO

Weld County

W. R. Ramsey's No. 1 Tighe (St. Anthony), SW NE SE, Section 15-7n-59, in the New Raymer-Buckingham district, cut the Timpas lime at 6,064-89 feet and is drilling with the Muddy as the next objective. The Timpas is considered the best marker to be found above the Muddy in that area. Based on the bottom of the lime, the Ramsey well is 415 feet higher than Continental Oil Co.'s No. 1 Briggs, in the Greasewood Pool, 18 miles to the southwest; 280 feet lower than Colorado Associated Oil Co.'s No. 1 Pumphrey, 15 miles to the southeast; and 200 feet higher than Prairie Oil & Gas Co.'s No. 1 Mortier, 6 miles southeast of the Greasewood producers. The Ramsey test is expected to pick up the Muddy at around 6,400 feet. It is planned at present to core the Muddy without running pipe and if it does not show anything worth while to go on down and core the Dakota and possibly the Lakota. There is a wide divergence of opinion among the operators in this territory regarding the drilling into the Muddy with rotary tools. Most of the operators from the Mid-Continent district appear to be satisfied with that method while those who have operated principally in the Rocky Mountain district favor changing over to cable tools before going into the pay. Both sides have strong arguments to back up their contentions. The shallower depth at which the Ramsey well reached the Timpas is credited in part to a thinning of the beds towards the east. One estimate places this thinning between the Greasewood Pool and the Ramsey test at 215 feet, which still leaves some evidences of structural growth in that direction.

The Tulsa-Fort Morgan Petroleum Co.'s No. 1 Anthes, C NE NE, Section 24-8n-59, 5 miles to the north of the Ramsey well, is still shut down at 3,318 feet after going through the Hygiene. Manning & Terry's No. 1 Niles, C SE NE, Section 13-6n-61, Greasewood district, is shut down at 6,721 feet with 4,400 feet of salt water in the hole from the Dakota. Ohio Oil Co.'s No. 1 Butters, C SW SW, Section 7-6n-60, northeast of the Greasewood producers, is bottomed at 6,732 feet, below the Muddy, in which it cut about 5 feet of saturated sand, and is cleaning out. The hole is troubled with cavey ground. It is bottomed less than 40 feet off the Dakota and it is planned to continue down to test that horizon.

Retter Oil Co.'s No. 2 Cronin, NW SW, Section 24-1n-66, Brighton-Lpton district, is drilling below 758 feet with a show of oil. It is believed to be only a few feet of a sand encountered at 800 feet in its No. 1 Smith, a short distance to the northwest.

Larimer County

Charles A. Culter and others' No. 1 Affolter, SE, Section 4-4n-70, West Berthoud, is bottomed at 2,620 feet and is preparing to run 8¼-inch. The 12½-inch at 334 feet, from behind which water broke through, was recemented and a shutoff secured.

Adams County

Hills Dome Lease Development's No. 1 Hills, SE cor., Section 27-3s-64, near Watkins, is shut down at 3,985 feet awaiting arrival of Mr. Pulse, head of the Pulse Drilling Co., who recently contracted to complete the test.

Elbert County

J. M. Botts and others' No. 1 Union Pacific-Richardson, C NW SE, Section 7-8s-58, Buick district, is reported drilling below 4,200 feet.

Archu'eta County

Oil City Petroleum Co.'s No. 1 Fitzhugh, NW SE SW, Section 34-33-1e, Chromo Dome, is shut down at 717 feet to adjust lease titles. At this depth it made considerable gas from the Lakota through water from the Dakota. Same company's No. 2 Brooks, NW cor. NE, Section 2-32-2e, Price Dome, has replaced rig moved away to drill another hole and is preparing to resume at 100 feet.

LaPlata County

J. W. Irwin & Co.'s No. 1 Doescher, SW cor. NW, Section 29-33-13, Dry Mesa, is running pipe to shut off water at 3,171 feet. It had a show of oil in the top of the Dakota at 3,135 feet. After water is shut off, the crew will return to New Mexico.

Montrose County

Uncompahgre Oil & Gas Co.'s No. 2 Vandemark, SW cor., Section 27-50-10w, Olate district, is resuming at 800 feet with F. S. Friedland in charge. The 12½-inch was run to bottom before operations were temporarily suspended several months ago. Cleaning out is in progress. The first objective is expected at 1,440 feet.

Rio Blanco County

The California Co.'s No. 1 California-Raven, NW SE, Section 30-2n-102, Rangely Dome, at last reports was still coring at 6,200 feet and going through thin layers of sand showing saturation. The hole has not been unloaded for a test and no information is available as to when a test will be made. The prevailing opinion is that the objective Weber sandstone has not yet been reached.

Magnolia Petroleum Co.'s No. 1 Titley, NW cor. SW, Section 15-2s-96, Piceance Creek, is drilling at 2,048 feet in lime with some gas showing. Its location is half a mile southeast of No. 1 Maddock, which was completed as a gas well at 2,958 feet.

Routt County

Mid-Colorado Petroleum Co.'s No. 1 Omholt, NE cor. SE, Section 29-4n-87, Fish Creek, is reported to have a good show of gas at 1,900 feet. The Texas Company's No. 1 Irwin-Carstarphen, NE SE NW, Section 5-6n-86, Tow Creek, is bottomed at 3,357 feet and underreaming to lower 6¼-inch at 3,345 feet.

Moffat County

Three geological parties have been reported in the Hiawatha district in northern Moffat County recently. One of these, it is understood, was in the employ of The Texas Company and was engaged in rechecking the geology in connection with negotiations to unitize the gas area. The Texas Company has one gas well on the west dome. Mountain Fuel Supply Co. is reported to have erected two more 250-bbl. tanks near its No. 1 Wilson, NE SW NE, Section 22-12n-100, the discovery well, which has been showing some oil. This gives it a battery of six 250s and one 500-bbl. receiving tank at this well. The company is doing some work on this well and it has been off the line for the past five weeks. A machine has been set up and is using the standard derrick for a mast. Cavey conditions have been interfering with the oil and gas flow and the hole was filled with mud and oil to hold down the pressure while tubing was run. While pulling the tubing it parted about 1,000 feet down from the top. It has been fished out except for two joints of the 3-inch which was left at the bottom and in which was installed a new system of shutoff. About 200 feet of cavings were in the bottom, about half of which has been cleaned out, but the oil and gas is being held back, with 2,000 feet of fluid. It is expected that when the hole is cleaned a liner will be run and the well deepened. Tubing also is being run in the Kuykendall No. 1, NE cor. SE, Section 22-12-100, which also is showing some oil and into which fluid has been run. The oil tests 39.6 degrees gravity, but this, it is understood, includes a mixture of distillate of a much higher grade with the crude.

WYOMING

Mid-Northern Oil Co., which was organized in 1920 as a subsidiary of Midwest Refining Co. to take over and operate its Montana properties, has been dissolved. Its holdings in the Cat Creek and Kevin-Sunburst Fields have been sold to the Continental Oil Co. In return, the Continental company has sold to the Mid-

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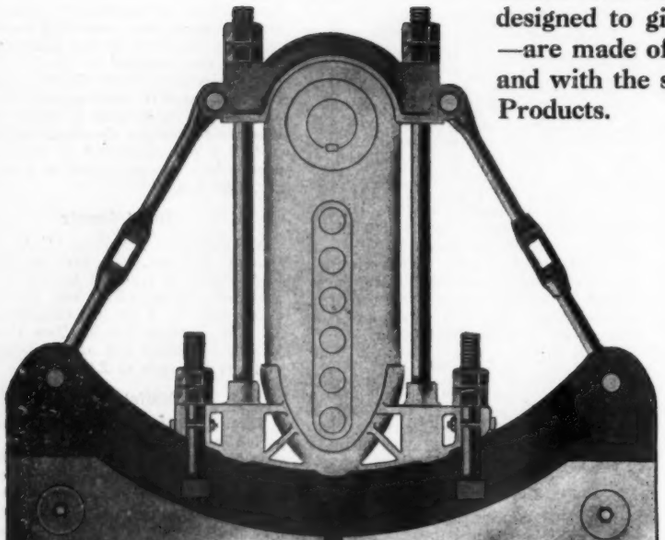

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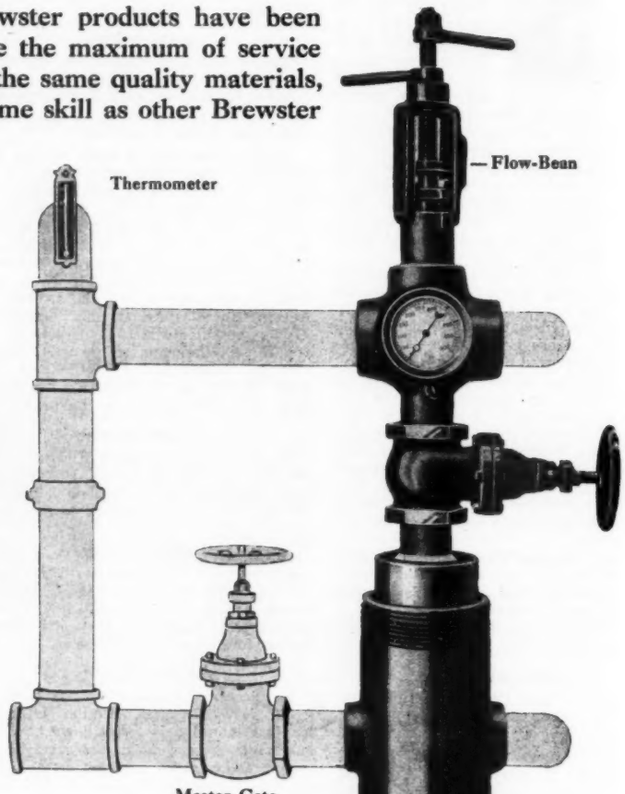

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west its holdings in Grass Creek and Elk Basin Fields in Wyoming. Midwest's holdings in the Pondera Field in Montana were not included in the deal.

Blackstone-Salt Creek Oil Co., a subsidiary of Producers & Refiners Corp., which has some minor holdings in the Salt Creek Field, also is in process of liquidation, and a special stockholders meeting has been called for October 20 to authorize the sale or foreclosure of the properties.

Weston County

Julius Peters and others' No. 1 Witzell, SE cor. NW, Section 30-46-64, Fiddler Creek, 2 miles southwest of the Osage Field, is cleaning out after discharging shots in the Muddy sand at 4,494 feet and 4,515 feet. The shot was run two weeks ago, but failed to explode. Before being shot oil rose 500 feet in the hole overnight after being bailed down. Total depth is 4,590 feet.

Gose Oil Syndicate's No. 1, NE cor., Section 28-47-63, Soda Creek, is bottomed at 4,050 feet and pulling 4¾-inch to underream and lower 6¼-inch to bottom. Last May the smaller string parted while attempting to pull it. William Hardendorf has the contract to clean out the hole and drill deeper.

There were no completions or locations reported in the Osage Field. Routine operations include the following:

Federal Oil Co.'s No. 4, NE SE SE, Section 15-46-64, set 8¼-inch at 1,200 feet and is waiting. Tug Oil Co.'s No. 2, NE NW SW, Section 15-46-64, is ready to run pipe on top of the sand at below 2,700 feet. Central Oil Co.'s No. 1, NE cor. SW, Section 15-46-64, is bottomed at 2,575 feet and waiting for pipe to shut off water before drilling deeper. General Oil Co.'s No. 1, SW cor. NW, Section 15-46-64, is waiting for fishing tools, and Paymac Oil Corp.'s No. 1 Toyne, SE NW NE, Section 3-46-64, is drilling at 1,100 feet. Riggs Oil Co.'s No. 2, SE NE, Section 16-46-64, is drilling at 2,850 feet, and Sandell and others' No. 2, SE SW, Section 12-46-64, is drilling at 1,000 feet. Albert Jones' No. 3, NW cor. SE, Section 21-46-63, is drilling at 200 feet.

Crook County

Holden & Lawrence, of Moorcroft, are spudding in their No. 1, NW SW, Section 25-49-67, Moorcroft Dome, near the town of Karo, on the Burlington Railroad. Several shallow wells which had small production in the Frontier have been drilled on this structure. The new test will go to the Muddy.

McWelthy and others' No. 1, Section 1-49-66, 7 miles north of Thornton, is bottomed at 530 feet, and supposed to be on top of the Muddy sand and to have a show of oil.

Niobrara County

Ohio Oil Co.'s No. 2 Richards & Comstock, C NE SW, Section 32-36-65, Lance Creek Field, is coring at 3,619 feet in the Sundance with core showing considerable oil. The location is about half a mile northwest of Ohio's No. 4 Converse Sheep, which in 1930 tested the Sundance for the first time and came in for 600 bbls. per day at 3,731 feet, total depth. This is the only Sundance producer in the field.

Converse County

Ohio Oil Co.'s No. 25 Kiney, SE SW SE, Section 4-33-76, Big Muddy, is drilling at 4,184 feet and nearing the Lakota. Continental Oil Co.'s No. 30 Glenrock Sheep, SW SE SE, Section 4-33-76, is drilling out cement at 4,506 feet, total depth. Cave was cemented off at this depth. The hole is being carried down to the Sundance.

Fremont County

Ward Oil & Gas Co.'s No. 2, NE cor., Section 28-34-90, Dutton Basin, is bottomed at 4,150 feet and circulating with 400 bbls. of oil in an effort to loosen bit stuck at 2,100 feet. The Texas Company's No. 2 State-Ridgway, SE SW SW, Section 36-34-95, Alkali Butte, is drilling at 3,737 feet between the Frontier and the Dakota. Big Horn Oil Co.'s No. 1 Gabus, SW cor., Section 14-38-94, Shoshoni district, is bottomed at 2,210 feet and underreaming to top of tools. If they can not be fished out, they will be sidetracked.

Natrona County

Mutual Oil Syndicate's No. 2, C SW SE, Section 14-35-79, Midway Dome, has standardized and drilled out 11 feet of bridge. Oil is standing within 900 feet of the top of the hole. Total depth is 6,063 feet, in the Muddy.

Summitt Oil Co.'s No. 1 Trewitt, NW cor., Section 21-33-80, North Platte, is drilling at 1,575 feet and estimated to be only a few feet off the Muddy.

Carbon County

Mutual Oil Syndicate's No. 27, NW SE NE, Section 12-18-78, Dutton Creek, is drilling at 800 feet with rotary with gas in the Shannon sand at 1,700 feet as the objective.

Sweetwater County

Wyoming-California Petroleum Co.'s No. 1, SE SE, Section 23-17-104, South Baxter Basin, is bottomed at 4,077 feet and fishing for bit. Mountain Fuel Supply Co.'s No. 1 Mullen, Section 2-17-104, South Baxter Basin, an old gas well in the Frontier being deepened to the Dakota, is drilling at 2,065 feet.

Park County

Henderson Producing Co.'s No. 10, SW NE NE, Section 31-58-99, South Elk Basin, is drilling at 1,777 feet in black shale and showing considerable gas. The next objective is the second Frontier at 1,800-1,900 feet.

Big Horn County

Allen Oil Co.'s No. 1 Montana-Wyoming, Lot 52, Section 33-56-97, Garland Dome, is delayed indefinitely after rigging up for a Madison lime test, by inability to obtain a lease on offset acreage.

MONTANA

Glacier County

Montana developments are centered principally on two wells drilling in the area to the southwest of the Cut Bank gas field, both of which are within striking distance of the objective. This district is now the most active in the State with approximately 12 operations under way. R. C. Tarrant's No. 1 Reickhoff, SE SW NE, Section 3-34-6w, topped the objective sand at 2,921 feet and drilled in 1 foot. Oil showed in the hole and operations were suspended to run the 6⅝-inch. It was expected that cement would be drilled out today and the hole deepened into the sand. This location is the farthest northwest of the group of drilling wells and 2 miles to the west of Jerome Drumheller's No. 1 Yunck, C SE NW, Section 1-34-6w, which first attracted attention to this district in 1930 when it was completed in the Sunburst sand at 2,710-23 feet for 5,000,000 feet of gas per day. It was drilled to 2,919 feet, but the deeper horizon was dry. A little more than a mile southeast is B. & H. Oil Co.'s No. 1 Haines, C SE SE, Section 2-34-6w, which was estimated at 50 bbls. per day from sand at 2,761-85 feet, but was not a satisfactory test on account of a bad hole. No. 1 Reickhoff is 2½ miles northwest of Tarrant's No. 1 Haglund, NW cor. SW, Section 13-34-

(Continued on Next Page)

Crude Oil Possibilities in Turner Valley Area Appraised By Minister of Mines R. G. Reid

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Oct. 8.—In the Central Turner Valley Field, New McDougall-Segur Oil Co.'s No. 5, LSD 14, Section 12-20-3w5, is being finished as a light crude producer from the McDougall-Segur sand at 2,880 feet. An early 22-hour test gave a yield of around 100 bbls. of 55 gravity crude. The well was later given a shot to determine whether this procedure, which had not previously been tried in the light crude horizon of the Turner Valley Field, would increase production. Early indications were that production had been only slightly increased. Roy Widney, field man for the New McDougall-Segur company, anticipated a settled production between 60 and 75 bbls. a day, the light crude commanding a field price of $3.30 a barrel.

While light crude showings have been encountered in this and a number of other shallow horizons in the numerous deep tests drilled in various parts of the Turner Valley Field, practically every test undertaken since Royalite's No. 4 got its crude naphtha production eight years ago has had the Madison limestone as an objective. A few of these tests which got good light crude shows in the upper sands halted drilling long enough to take the flush production or took production while deepening; but in most cases no serious effort was made to test the potentialities of the upper horizons. Last December, as a conservation measure, the Alberta government prohibited the drilling of any new tests to the deep lime. New McDougall-Segur's No. 5 was started as a definite test of the McDougall-Segur sand, with the encouragement of the provincial lands and mines department, the work being supervised by William Calder, director of the petroleum branch.

While the settled production is not large, with the high-grade of the crude and the low cost of drilling, in comparison with deep lime tests, the New McDougall-Segur well is expected to prove a profitable venture. It may result in more systematic testing of the shallow sands in other parts of the field. An official statement issued by R. G. Reid, minister of lands and mines, deals as follows with the prospects:

Crude Oil Possibilities

"The Government is, and always has been, prepared to encourage in every way possible the development of crude oil production. This is the more valuable resource and does not involve such tremendous wastage of natural gas as has attended the production of naphtha.

"Petroleum imports into Alberta today are at the rate of 1,500,000 bbls. yearly. Added to this is the actual production from Turner Valley, Red Coulee and Wainwright fields of more than 1,000,000 bbls. a year, which shows a visible demand of 2,500,000 bbls. yearly for home consumption. Home production, therefore, stands at 150 per cent short of home consumption.

"With the benefits of past experience, elimination of previous errors and increased development of the proven fields in Alberta, the total annual production of the province could be brought up to 2,500,000 bbls., placing Alberta on a self-supporting basis.

"There are three different crude oil horizons in the Turner Valley Field at depths very much shallower than the naphtha-producing limestone. The oil in these sands is of a very high grade in quality and its development would undoubtedly prove not only highly remunerative, but more lasting in productivity than it is possible to anticipate from the naphtha-carrying gas.

"An important feature also in tapping these horizons is the economy in initial capital expenditure that is offered. Only half the depth requires to be drilled, and the expense and difficulty of a deep well is eliminated.

"The recent developments in the McDougall-Segur well show what can be accomplished. In this well crude oil was struck at 2,860 feet, in comparison with from 4,800 to 5,400 feet for naphtha wells in adjoining locations. With respect to cost, six or eight wells similar to the McDougall-Segur crude oil well could be sunk for the cost of one naphtha well. The McDougall-Segur well cost under $12,000, but even this is extremely low compared to the cost of sinking the naphtha wells.

"The crude oil found is worth at present $3.30 a barrel compared with $2.80 to $3.10 for highest grade naphtha. In addition the new crude oil averages from 25 to 30 per cent gasoline content and may exceed this.

"With the exception of three wells which were drilled to the shallower horizons and which have been profitable in crude oil production since 1927 and 1928, the McDougall-Segur development records the first real effort to take advantage of the opportunity the field offers in this respect. It should presage a much brighter future for the field."

Example From California

After citing the contribution of comparatively small producing wells to the aggregate production of the California fields, and to the United States production generally, Mr. Reid adds:

"This situation is particularly applicable to Alberta, and operators could considerably increase the development of the crude oil areas of the province by economically operating small producing wells which undoubtedly would return considerable revenue.

"As an example of what small production per well might mean, the Red Coulee area is instanced, where one company only is working; which, with the operation of four wells has reaped considerable benefits and which is projecting the drilling of a fifth well.

"Good indications of potential production have been encountered not only in the areas already mentioned, but also at Oyen, Skiff and Ribstone, where small well development, operated with economy and profits, is possible. With an increased number of such wells in these areas, the province should be independent of imports. Mistakes of the past could be corrected and economic methods introduced. Several wells in the Ribstone area have been abandoned by the operators who apparently are only anxious of obtaining large productions per individual well.

"Alberta's oil fields offer industrial opportunities of a very particular and attractive nature. With the background of known values and with lessons of past experience they offer steady and permanent development which could be based on definite production with satisfactory remuneration.

"The petroleum industry, like any other, must be judged by its results: results which would show a proper return for capital expenditure and working expenses together with the reasonable ful-

fillment of expectations regarding the lifetime of operations. This is the promise which is definitely offered by conditions as they are now known within the province.

"The discovery of oil pools and production of gushers are without question extremely gratifying to any community. Such spectacular discoveries and events, however, are not experienced in every area. As a secondary consideration, steady development on a profitable basis is by no means an insignificant substitute and is free of the risks and high financial liability which big wells entail."

McLeod Deep Test

In Central Turner Valley, McLeod Oil Co.'s No. 4, LSD 16, Section 1-20-3w5, is down 7,600 feet, or 1,000 feet below the previous record depth for Canada. Derrick is being strengthened and drilling equipment overhauled for still deeper drilling. At this depth the drill is thought to be working in the Devonian limestone. The test got the Madison lime originally at 3,730 feet and drilled into the Banff shales around 5,560 feet. Wet gas and naphtha were met at two main horizons in the Madison lime at 3,780 and 3,940 feet. A small production of 50 gravity crude, around 5 bbls. a day, was met in the Banff shales at 5,860 feet, with increased shows at 6,150 feet; while a later oil show was recently encountered in or near the top of the supposed Devonian at 7,430 feet. It was for a while thought that the lime in which the test is now drilling represented a recurrence of a more recent formation, resulting from faulting; but the latest opinion is that it is actually the Devonian, and drilling will be continued as far as possible for a definite test of the formation.

North Turner Valley

In the North Turner Valley, Model Oils' No. 2, LSD 16, Section 22-20-3w5, is redrilling at 3,060 feet, after cementing back from 3,953 feet. Work on this test has been delayed by serious drilling difficulties but rapid headway is now being made. The test was originally started by Anaconda Oil Co. and was taken over last December by Model Oils, Ltd., which has a good producing well a half mile farther south in the same section.

South Turner Valley

In the South Turner Valley area, Canadian Royalties' No. 1, LSD 9, Section 5-19-2w5, is drilling below 3,000 feet, after picking up the Stockman sand at 2,940 feet. The test is apparently located high on the structure. Camp buildings and rig are being put in shape for winter drilling.

Mar-Jon-Freehold's No. 1, LSD 9, Section 28-18-2w5, is drilling below 5,175 feet on a rotary test and has not yet reached the Madison.

Twin River Test

C. A. Roney of Los Angeles, Calif., is in Calgary in connection with arrangements for a test to be drilled on acreage of the Nordon Corp. in the Twin River area southeast of Lethbridge. This area was tested last year by Parco Oil Co.'s No. 1 in LSD 16, Section 34-1-20w4, which got an oil show below the Ellis-Madison contact at 3,870 feet. A pumping test showed 10 bbls. a day of high-grade crude. The well was given two shots, and though not cleaned out after the second shot has been making about 2½ bbls. a day since July. Following withdrawal of the Parco Oil Co., Nordon Corp. has arranged for further testing of its acreage. The area is being investigated by Arthur I. Davis, consulting engineer and geologist for the Wilshire Oil Co. of California. The new location will be about 25 miles west of Milk River. The acreage is in Townships 1 and 2, Range 30w4. Parco Oil Co. withdrew from active participation in wildcatting operations following the Sinclair Prairie consolidation but is reported to retain a royalty interest in the Twin River operations.

Nordon Corp. has also been doing surface testing in the Spring Coulee area, where Alberta Pacific Consolidated's No. 1 deep test in LSD 11, Section 15-4-23w4, for oil shows in the same horizon as the Twin River well; and is reported arranging for a deep test to be drilled after the new Twin River well is completed.

Calgary & Edmonton Operations

The Calgary & Edmonton Corp. now has a total of 13 producers on its Turner Valley acreage, with a combined maximum flow of 103,245,000 feet of gas and 1,656 bbls. of naphtha. Drilling is proceeding at Spray's No. 1 (now Canadian Royalties) well while operations on Miracle's No. 2 are suspended pending receipt of rotary equipment. The corporation contributed to the cost of Mar-Jon-Freehold's No. 1 well, in return for a royalty interest, and this test is now being completed.

A certain portion of the acreage under lease at the beginning of the year has reverted to the corporation by quitclaim, due in many instances to the lessees' lack of funds for development and in some cases to the fact that geological work and deep tests failed to indicate favorable productive territory. In all, 34,178.18 acres remain under lease. The corporation received 285,930 bbls. production on its acreage royalties, amounting to $103,908.06. Although the refineries prorated their purchases and the wells were not operated to capacity, the production exceeded that of the previous year by 66,312 bbls., while royalties increased by $16,457.15.

Moose Mountain Drilling

In the Moose Mountain district, northwest of the Turner Valley Field, Graystone Petroleums' No. 2 Signal Hill, LSD 9, Section 34-23-5w5, has resumed operations after a prolonged shutdown. The drillers are pulling 6-inch and 8-inch casing and reaming to the old bottom at 4,224 feet, preparatory to carrying the test deeper. The area was developed 18 years ago by the Moose Mountain Oil Co., whose No. 1 well got good shows of green crude. Signal Hill Oil Co. later arranged to test some of the Moose Mountain acreage and its No. 2 well got water at 90 feet and gas in four sands between 290 and 590 feet. Oil shows were met at 1,360 and 3,905 feet, and a rather good show around 4,120 feet. The test was subsequently taken over by Graystone Consolidated Petroleums, Ltd. At the present depth the test is close to a potential light crude horizon in the Dalhousie sand and not far from the Madison limestone, which may also be tested.

In the south end of the Moose Mountain area, Elbow Oils' No. 1, LSD 11, Sections 35-22-5w5, is using Turner Valley drilling mud to overcome caving, and making some headway below 3,640 feet.

Keho Lake Test

In the Keho Lake district, northwest of Lethbridge, Hudson's Bay Oil & Gas Co.'s No. 1 Keho, LSD 2, Section 17-11-22w4, is reported making hole slowly below 4,864 feet and planning to set 6¼-inch casing at 4,880 feet, after which the well is to be drilled into the producing horizon at the Madison contact. The previous drilling last fall got oil shows in the top of the Madison at 4,920 feet.

Red Coulee Field

In the Red Coulee Field, Vanalta Oils' No. 5, Section 4-1-16w4, is reported to have spudded in. D. A. Macdonald Syndicate's Ko-Top No. 1-A, Section 2-1-17w4, is reported shut down at 2,100 feet after attempts to sidetrack.

Drilling on Montana Border

Canadian operators are watching with interest the drilling operations in the Montana area north of Cut Bank and south of Cardston, Alberta. Some five tests are active and another is being started. Montana Power-People's test is drilling below 2,160 feet and Montana Power-Simero's test on the Mary Miller place is below 460 feet. Tarrant Syndicate-Yunck is drilling below 2,260 feet and Tarrant-Haglund, Sr., is down 1,160 feet and drilling. Santa Rita-Younck's No. 1 is below 950 feet and the Santa Rita interests have spotted a new test on the Martin Halvorson place in NE NE SE Section 24-34-6. The tests now in progress will prove a considerable area and if production is secured a number of offsets are likely to be started.

The area on the Alberta side south of Cardston has always been regarded as a potential oil area. Some nine different tests were drilled in the Cardston district between 1915 and 1919, locations being in Townships 1 and 2, Ranges 25 and 26. Boston-Alberta Oil Co.'s No. 1 in LSD 16, Section 5-1-25w4, finished in 1917, got gas in six sands between 690 and 1,810 feet and oil shows at 500, 690, 800 and 1,930 feet. The shows were noncommercial and drilling was discontinued at 1,930 feet. A second test by the same company got similar showings.

Northern Alberta

In the Athabaska district, northern Alberta, Athadome Oils' No. 1, N half Section 20-72-24w4, has been abandoned at around 1,900 feet after drilling approximately 150 feet into the Devonian lime. The test got a gas flow, estimated between 3,000,000 and 4,000,000 feet, in the McMurray sand around 1,700 feet; the gas was accompanied by water and eventually it was decided to plug the well and start a second test. The latter has been located closer to Athabaska. The drilling outfit is being moved to the new location and No. 2 is expected to spud in the latter part of the month.

Manitoba Drilling

In the Manitou district, southwestern Manitoba, Commonwealth Petroleum's No. 2 Pembina Valley, LSD 2, Section 26-2-9-wPM, is reported drilling at 2,535 feet and fighting caving in a formation close to the Winnipeg sand.

Fort Norman Production

R. W. McKinnon, in charge of the Fort Norman oil operations in the Far North for Imperial Oil, Ltd., has returned to the East. He went north by plane early in the summer to look after the producing and refining operations which were then resumed in the Fort Norman Field. Production was carried on for approximately three months, crude being taken from Imperial's No. 2 Discovery well. Part of the production was treated in a small refining plant for the production of gasoline, and the remainder was sold unrefined for Diesel oil purposes. The crude oil production from the well aggregated upwards of 30,000 gallons for the summer, or around 860 bbls. The gasoline production was about 10,000 gallons, while the fuel oil output was slightly over 20,000 gallons. The output was marketed chiefly to mining companies in the Great Bear Lake area, 300 miles west of Fort Norman, the companies laying in supplies sufficient to tide them over till the reopening of navigation next spring. The refined gasoline sold at 90 cents a gallon, representing a drastic cut in the price previously ruling throughout the North.

The company has two producing wells in the field, about 52 miles below Fort Norman. In the early stages of the oil development, some 12 years ago, the trip from Fort Norman to the wells represented 21 hours' hard "mushing" but under modern conditions Mr. McKinnon traverses the distance in 25 minutes by plane. It is understood that operations in the field will be resumed next spring with the reopening of navigation, when it is expected that the increased development work in the Great Bear mining area will result in a larger demand for Fort Norman production. The two wells have an estimated potential production of 140 bbls. a day.

Quebec Oil Strike Reported

In Yamaska County, Quebec, Canadian Seaboard Oil & Gas' No. 1, in St. Gerard Parish, is reported to have struck a show of oil at 4,400 feet. No definite production test has yet been made. There is apparently a considerable quantity of oil in the hole. The test, started early in the year, was carried to 4,200 feet with cable tools, and changed over to rotary for the deeper drilling. This is the first oil showing reported in the recent St. Lawrence Valley drilling operations. The company is stated to be a subsidiary of the Mexican Seaboard Co. The Drilling & Exploration Co. of New York has the contract.

Ontario Drilling

In the Dawn Field, Lambton County, Ontario, Union Gas Co.'s No. 64, Lot 24, Concession 2, Dawn Township, is drilling at 1,100 feet. Union's No. 61, NW, Lot 23, Concession 2, which had a small oil production in the gas horizon, is cleaning out.

In Euphemia Township, Lambton Oil & Gas Syndicate's No. 1, Milton Walker farm, SW, Lot 28, Concession 9, has been deepened to 495 feet. At this depth it was shot with 100 pounds of 75 per cent dynamite. The sand was apparently not improved by the shot, but the rush of gas appears to have cleared the mud vein at 308 feet in which the first pay was encountered, increasing the pumping production from 4 bbls. to 12 bbls. a day or better. Frank Marchand of Petrolia is drilling a new test west of Lambton's No. 1 on a share basis with the Lambton Oil & Gas Syndicate.

In Middlesex County, Luke Smith of Chatham is reported leasing acreage near Crumlin, a few miles east of London. Some drilling was done in this area about 1919, but was not carried to conclusive depth, though gas shows were reported.

Considerable shallow drilling for gas has been carried on this season in the Haldimand-Norfolk section of the Ontario producing area. The Emerald Syndicate of Toronto is reported to have drilled seven small gassers on acreage in Haldimand County near Cayuga. The White Eagle Syndicate of Petrolia, headed by W. J. Hussey, is drilling its No. 5 well near Caledonia. Some shallow gas production has been secured in previous tests. H. G. Patterson and associates are reported drilling for gas in Haldimand County, near Dunnville. Practically all this production is being taken by the Southern Ontario Gas Co.

Rocky Mountain Area

(Continued from Preceding Page)

6w, which precipitated the present drilling campaign when it was completed as an 85-bbl. well last June in sand at 2,848-94 feet.

The other near completion is Montana Power Co.'s No. 1 Peoples, C SW NW, Section 20-34-5w, nearly 5 miles southeast of Tarrant's No. 1 Reickhoff and about the same distance south and a little west of the nearest Cut Bank gas well. It had a show of gas at 2,712 feet and shut down to run the 6¼-inch. The other drilling wells are mostly in between these two operations with the exception of Montana Power Co.'s No. 1 Simereo, C N half, Section 5-33-5w, which is still farther southeast which is ready to spud, and The Texas Company's No. 1 Fisher, C S half SW, Section 10-35-5w, which spudded September 29. The last named is in the proven gas area to the northeast.

B. E. Adams and others' No. 1 Britton, SE cor. NE, Section 14-34-6w, has spudded, and R. C. Tarrant's No. 1 McLellan, C SE SW, Section 7-34-5w, which will be drilled with a rotary, is spudding. Tarrant's No. 1 Haglund, Sr., NW SW NW, Section 13-34-6w, is drilling at 1,750 feet, and his No. 1 Younck, NW cor., Section 12-34-6w, is drilling at 2,450 feet.

A new location reported is Santa Rita Oil & Gas Co.'s No. 2 Yunck, NE cor. SE, Section 24-34-6w, which is rigging up. This company's No. 1 Yunck, NE NW NE, Section 23-34-6w, is drilling below 1,200 feet. Louis B. (Tip) O'Neil, who developed the Cut Bank gas field for the Montana Power Co. and a pioneer in Montana development, is president of the company. The company has approximately 8,000 acres of which 2,000 acres is considered proven; 1,640 acres proven leases in the gas area and 2,000 acres semiproven. Irvine E. Stewart is chief geologist.

Carbon County

Ohio Oil Co.'s No. 8 Caldwell, SE SW NE, Section 12-7s-21, on the east side of the Dry Creek Field, made 495 bbls. in 24 hours through a half-inch bean on an official gauging. It is producing from

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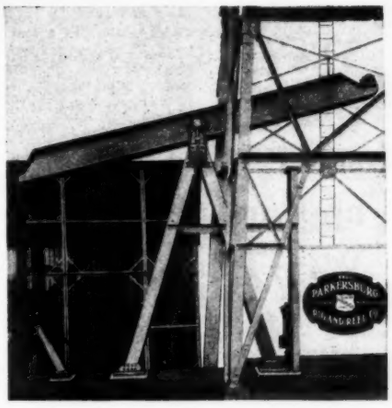

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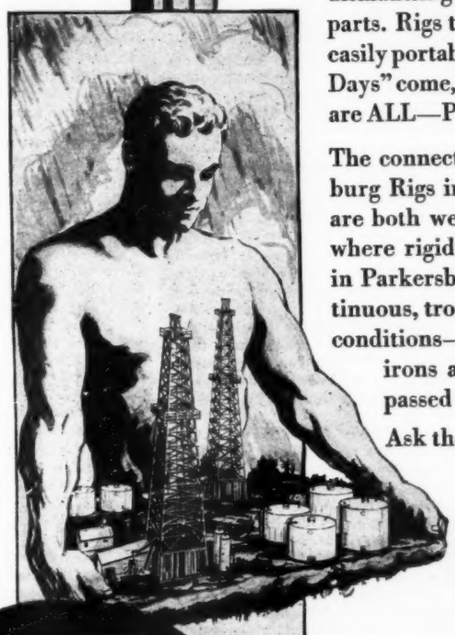

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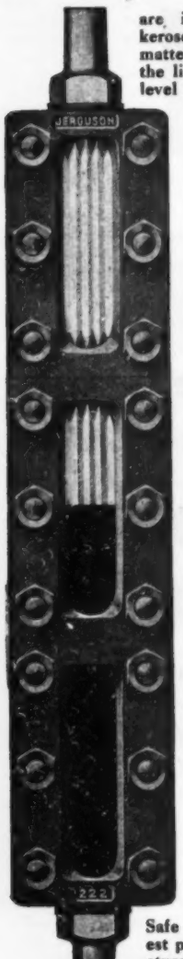

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the Dakota at 4,595 feet after plugging back from 6,887 feet. Carbon Oil & Gas Co.'s No. 1 McMinn, NW SW SW, Section 7-7s-22, a little to the southeast of No. 8 Caldwell, is preparing to resume at 4,479 feet after shutting down to await the completion of the offset. It is through the Frontier and will deepen to the Dakota. Ohio's No. 1 Bowman, C SE NE, Section 4-7s-21, is coring at 5,928 feet in the Lakota and the cores show considerable oil. Its No. 7 Robinson, C SE SE, Section 3-7s-21, is shut down at 5,753 feet waiting for drill pipe.

Petroleum County

Minnesota-Flatwillow Oil Co.'s No. 1, Section 7-11n-31, Ragged Point district, is reported abandoned at 3,250 feet.

Yellowstone County

A syndicate in which W. E. Rice, W. M. Fulton and D. E. Hageman are interested, is starting a test on the Molt structure, 25 miles northwest of Billings, in the C W half, SE, Section 30-2n-23. An 84-foot steel derrick is being moved in. It will test the Frontier and possibly the Lakota. Seventeen thousand acres have been assembled. D. E. Hageman, geologist, made the location. Cable tools will be used. A company is being formed to take over the holdings and drill the well. The structure is 9 miles northeast of the Lake Basin Field.

Pondera Field

Adams-Bell Syndicate's No. 1 Venets, NE SE NE, Section 31-27-3w, South Pondera, is drilling below 1,860 feet and the objective is expected at 1,950-75 feet. The South Pondera Dome is structurally a little higher than the Pondera Field, but wells drilled on top found the sand tight and impervious. This test is on the flank and is being drilled on the theory that the sands are more porous than on top.

Toole County

Liquid Gold Oil Co.'s No. 1 Roberts, C NW NE, Section 25-36-1e, Barthelote district, is drilling close to the Ellis-Madison contact at 2,635 feet.

In the Kevin-Sunburst Field, the West side Oil Syndicate's No. 1 Haugen, NW cor. SE, Section 11-35-3w, is drilling after setting 6¼-inch at 1,620 feet. There was a show of oil in the Sunburst at 1,512-48 feet. The Ellis-Madison contact is expected at around 1,760 feet. Eagle Oil Syndicate's No. 1 Haugen, NW cor., Section 12-35-3w, is drilling at 1,310 feet. William Hewson and others' No. 1 Van Note, NW cor., Section 30-35-2w, is drilling below 1,080 feet, and the Missoula-Kevin Oil Co.'s No. 1 Davidson, SE cor. NE, Section 28-35-3w, is running casing at 1,329 feet. Pfabe & Engleking's No. 4 Seabrook, SE SE, Section 19-35-2w, is drilling at 280 feet.

WASHINGTON

Ohio Oil Co.'s No. 1-A Robinson, Section 5-17n-9w, near Aberdeen, is coring at 4,875 feet in shale and gas showings continue. This gas has been apparent in the shale almost all the way down.

UTAH

Ramsey Petroleum Co. is reported to have taken over the American Oil Corp.'s No. 1 Senior, C NE SW, Section 18-26s-7e, on the Last Chance Dome in Emery County. This well was started about a year ago and shut down after spudding.

SOUTH DAKOTA

Custer County

Barker Structure Drilling Co., of Rockford, Ill., has made a tentative location for No. 4 in the NW, Section 27-6s-2e, on the Barker Dome, where the same interests have drilled three wells. The location is one-quarter of a mile north of the discovery, which was a small producer.

Fall River County

Lakota Development Co.'s No. 1 Knude, SE SE, Section 20-10s-4e, Shiloh district (Hollingsworth & Mullen), has a large flow of warm water at 3,030 feet. Chadron-Osage Oil Co.'s No. 1 Moody, NE cor. SW, Section 6-12s-6e, Moody Dome, is drilling below 3,200 feet. Hill & Lawrence's No. 1 Strauss, NW, Section 29-9s-8e, Tepee structure, is moving in materials for a test.

Butte County

Wytex Oil Co.'s No. 2 Hamilton, SE cor. NE, Section 38-8n-1e, Oak Creek, is cleaning out at 1,530 feet in the top of the Minnelusa, where a show of oil was drowned out by water from above. An effort is being made to shut off the water and test.

Overproduction Is Feared in Michigan; Many Wildcats in East Border Area

By GEORGE A. WHITNEY

MOUNT PLEASANT, Mich., Oct. 10. Operators in the Central Michigan Field had hopes for dollar oil during the summer, but it now seems more likely the tendency will be for a decline. Production has been steadily bolstered until it is reported in an estimate of 23,000 bbls. a day and with the winter near and the closing of the summer run of lake tankers carrying Pure Oil Pipe Line Co. crude limited storage facilities may bring about more production than the company can well handle.

The only real completion for a few days was W. L. McClanahan, Inc.'s No. 1 on the Mack Speerbecker farm, SW SW NW Section 13, Greendale Township, Midland County. It failed to flow when drilled in and was given a treatment of acid, and boosted to an initial production of 540 bbls. Before the treatment there was approximately 2,000 feet of crude in the hole. The Speerbecker stands now about as good as any of the wells drilled in that particular section, with the exception of the Braden-Saunder well on the Kate Stapleton farm, same section, which showed an initial of 1,000 bbls.

In the area in Sections 6, 7 and 18, Lee Township, and Sections 1, 12 and 13, Greendale Township, Midland County, known as the east border, despite rather adverse results in recent tests, there is more drilling than in any other place in Michigan at present. Three tests are going down in Lee Township, and a half dozen are being drilled in Sections 12 and 13 of Greendale Township.

Nearing Pay Sand

Wells that probably will be completed within the next week or so include Pure Oil Co.'s No. 1 in the northeast corner of the Bemis-Bond farm, NE NE NW Section 14, Greendale Township, Midland County; Pacific Oil & Gas Co.'s No. 1, in the northeast corner of the Charles S. Hoyt farm, NW NW NE Section 24, Jasper Township, same county; Pure Oil Co.'s No. 4-A on the Iosco Land Co. tract, W half NW Section 16, Greendale Township; R. D. Malcom's No. 1 well in the northwest corner of the Nickerson farm, NW NW NE Section 13, Greendale Township; G-Lee-P Oil Co.'s No. 2 well, 330 feet from the south line and 1,650 feet from the east line of the William Schafftr farm, SW SW SW Section 12, Greendale Township; and John C. Arthur's No. 3 J. and C. Schug farm, E half S half SW Section 22, Vernon Township, Isabella County.

Field Pickups

In Vernon Township, Isabella County, Homer C. Leonard, trustee's test on the Homer G. Slentz farm, NW NW SE Section 22, is being tested in the Dundee formation and made a good showing but failed to flow and indicates that if put on the pump it should make at least an initial of 100 bbls., but may be given an acid test.

The Gordon Oil Co.'s No. B-5 well, in the northeast corner of the N. J. Skinner farm, NW NW NE Section 16, Greendale Township, Midland County, surrounded practically on all sides by large initial producers, is reported to have produced initially 120 bbls. in 12 hours, but will possibly be treated by acid in hopes of increasing the output of crude. On farms adjoining the Skinner tract wells were brought in that showed initial production of 1,000 to 3,000 bbls.

W. L. McClanahan, Inc., is reported drilling No. 7 well in the northeast corner of the A. G. Struble farm, NE NE SW Section 10, Greendale Township. Same concern made a location for a second test in the northeast corner of the W. S. Root farm, NE NE SW Section 12, same township.

Theodore Oil Co. is drilling No. 1 in the southeast corner of the McBain farm, SE SE SW Section 1, Greendale Township. R. D. Malcolm is drilling No. 2 in the southeast corner of the Malcolm-Hastings farm, NE SE SE Section 13, Greendale Township. Talbot Oil Co. is drilling No. 2 in the southeast corner of the State of Michigan land, SE SE SE Section 11, same township. Braden-Saunders Co. is drilling No. 2 well, 990 feet from the north line and 330 feet from the west line of the Kate Stapleton farm, SW NW NE Section 13, same township. Stewart and others are drilling No. 2 on the Opperman farm, SE NE SE Section 12, same township.

Pure Oil Operations

The Pure Oil Co. is drilling No. 6 well, 1,650 feet from the north line and 330 feet from the east line of the Charles Mullett farm, N half SW NE Section 15, Greendale Township. Same company is drilling No. 5 well, 2,310 feet from the north and west lines of the Emma O. Reed, SE SE NW Section 12, same township. The Pure company is also drilling No. 3 well, 2,310 feet from the north and east lines of the George Lilly farm, S half NE Section 18, same township, No. 1-A on the Claud and Gladys Harnicks north 60 acres in the E half NE Section 14, and No. 3 well, 990 feet from the north line and 330 feet from the east line of the Nathan Kidder farm, N half NE Section 17, Greendale Township.

Michigan Gas & Oil Corp. is drilling on the B. Rayner farm, SW SW SW Section 6, Lee Township, Midland County.

Johnson Oil & Refining Co. made a location for No. 2-A well, 1,070 feet from the south and east lines of the Mable L. Sippy farm, SE NW Section 24, Leavitte Township, Oceana County.

Smith Petroleum Co.'s test in the northeast corner of the Mrs. Clara M. Studer farm, N half SE Section 14, Fremont Township, Saginaw County, has been abandoned as dry at 1,000 feet, as the Red Rock formations indicated the well was running too low to get a producing structure in the Dundee.

Isabella Oil Development Co. is drilling a gas test 660 feet from the north and west lines of the Bartlett-McClintic farm, NW SW Section 3, Broomfield Township, Isabella County, west of Mount Pleasant.

Goll, Graves & Meckling are drilling a second test, 330 feet from the south line and 990 feet from the east line of the C. F. Adams farm, SW SE NW Section 2, Chippewa Township, Isabella County.

Smith Petroleum Co. is drilling a test, 330 feet from the north line and 990 feet from the east line of the John Poellet farm, N half E half SW Section 29, Birch Run Township, Saginaw County. Alvin H. Weber, trustee, is drilling a test, 990 feet from the south and west lines of the William Kirchner farm, NE Section 15, Tittawass Township, same county.

T. K. Buzzard, of Mount Pleasant, is reported to have taken a new lease on the Mahon farm, which was originally developed by Gibson-Johnson-Border and later plugged when production declined. The Mahon lease is in the Leaton Pool, in Isabella County.

Flow Tests Under Way in Four California Fields; Expect Two New Wells in Kettleman Hills

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Oct. 8.—At the conclusion of the first week's flow test in the Playa Del Rey Field this morning it was quite evident that curtailment in this field has been more or less of a myth. With the exception of the Union, Ohio, Birch-Royer and a few other operators, there has been practically no curtailment whatever. It should be remembered of course that the production of this field is still registering a normal decline and has apparently slipped off a little faster than believed. The decline from now on should be relatively slow as the field has just about reached the settled stage. There are still a few wells but for the most part wells have been on the beam for some time. Playa Del Rey, due to the fact that the umpire has given it a rated potential of only 17,520 bbls. per day, came within 1,500 bbls. of reaching the assigned potential. The Union Oil Co. exceeded its rated potential and topped the list when its production was doubled during the first seven days of the flow test now in progress. The Ohio Oil Co. also shaped up well, thus evidencing compliance with curtailment. The flow test now being conducted in the Playa Del Rey Field is the first of four production tests to be made in the Playa Del Rey, Santa Fe Springs, Long Beach and Huntington Beach Fields to determine definitely maximum potential production and ascertain the effectiveness of curtailment.

Santa Fe Springs Test

Upon the conclusion of the production test at Playa Del Rey, Umpire Pemberton and his staff of assistants will move out to Santa Fe Springs and supervise a flow test in that field. The test at Santa Fe Springs will be a little more complicated than the work nearing completion at Playa Del Rey due to the larger number of productive horizons and because of the numerous producing wells which have been suspended because of curtailment. At the close of September there were 181 wells entirely shut in. Due to the large number of wells involved, it is probable most of these projects will remain undisturbed. Operators in this field can either open up all wells for a 15-day flow test or can permit their respective wells to remain shut in, in which event they will be given a rating comparable with the average daily production registered by wells producing from the same zone. Because of the expense involved and the reluctance to increase production in view of the large quantity of oil in storage, it is likely most of the wells will remain shut in and will be assigned an arbitrary figure predicated on the production of those wells which actually produced during the production test. Of the 181 wells shut in at Santa Fe Springs, the General Petroleum has 46, the Union 43, Standard 30, The Texas Company 24, Shell Oil Co. 22, Associated Oil Co. 10 and miscellaneous companies 6.

Santa Fe Springs has a potential daily production of 85,725 bbls., according to figures issued by Umpire Pemberton, but the actual field production is not expected to reach this rating since many of the wells now shut in will remain undisturbed and will not be reflected in actual production. Wells of the Union and General Petroleum will unfortunately be penalized if these companies find it advisable because of economic conditions to keep them shut in. Most of the Union Oil Co.'s wells and a number of the General Petroleum's projects are located on the apex of the structure and are consequently better producers than wells less favorably located. This is particularly true because the Union and General Petroleum have repressured the Bell and Meyer zones from time to time. It is likely that major companies will recondition some of these wells which have been shut in at Santa Fe Springs, provided that there is sufficient equipment available. It is hardly likely major companies will purchase enough additional equipment to make a complete test for the simple reason that most of the wells involved will have to be shut down again at the conclusion of the test.

The flow tests to be conducted in the Playa Del Rey, Santa Fe Springs, Long Beach and Huntington Beach Fields should definitely remove any doubt as to the maximum daily production of these fields. None of the four fields will attain its respective rated potential. The umpire credits Playa Del Rey with a potential daily production of 17,520 bbls., Santa Fe Springs with 85,725 bbls., Long Beach with 93,545 bbls. and Huntington Beach with 37,500 bbls. My personal records credit these four fields in the order named with 16,000 bbls., 76,000 bbls., 82,000 bbls. and 31,500 bbls., respectively. This comparison should not be interpreted as a destructive criticism but merely indicates a difference of opinion as to the potentiality of the fields. The California umpire has a most difficult task at best and has been handicapped during the past year because of the inability to conduct periodic flow tests and also because of the refusal of some operators to recognize the advisability of curtailment.

State Potential Reduced

California's potential daily production was reduced 10,200 bbls. for October, bringing the state's maximom output down from 1,033,200 bbls. to 1,023,000 bbls. Los Angeles Basin fields were given the largest drop as the potential daily production for Southern California fields was reduced from 384,600 bbls. to 375,000 bbls. The potential daily rating of Kettleman Hills was increased 2,000 bbls., while Huntington Beach, Long Beach, Playa Del Rey and Santa Fe Springs were reduced 600 bbls., 3,900 bbls., 1,080 bbls. and 3,200 bbls. respectively. The allowable daily production for October, November and December was set at 440,000 bbls. compared with the previous allowable daily production of 475,800 bbls. The allowable of San Joaquin Valley fields was reduced 8,700 bbls. per day, the Coastal district 4,600 bbls. per day and Los Angeles Basin fields 22,500 bbls. daily. Fields credited with the largest reduction in allowable daily production include Kettleman Hills with a daily reduction of 6,000 bbls., Midway-Sunset with 2,000 bbls., Ventura Avenue with 4,000 bbls., Huntington Beach with 2,500 bbls., Long Beach with 7,500 bbls., Playa Del Rey with 1,500 bbls. and Santa Fe Springs with a reduction of 7,000 bbls.

Mr. Blodget's Opinion

It is apparent that there was no unanimity of opinion with respect to the advisability of conducting flow tests in Los Angeles Basin fields as decreed a few weeks ago by the Executive Committee for Equitable Curtailment. This is evidenced by a recent communication of Rush M. Blodget, general manager of the Oil Producers Sales Agency, directed to all members of the agency. This communication states that "open flow tests have recently been ordered for at least three Los Angeles Basin fields. Flow tests have been talked about for many months. Now we have them. There are logical arguments for and logical arguments against them. Those against them say they are expensive, and that many operators cannot afford them; that the producers might develop a greater production than that which now exists, thus increasing the glutting of our markets; that the water problem might be increased and spread over the entire field. Those in favor of the flow tests say that it will give confidence to proration; that it might reduce the field allowable, by reducing many lease well potentials; that it will work for equity by bringing out undeniable truths irrespective of wherever the chips may fall. The Executive Committee for Equitable Curtailment, by its collective vote, whether unanimous or not, has decided that open flow tests should be approved. The executive committee of the California Oil Producers Sales Agency, after serious debate and grave doubts, has instructed the management to do all in its power to assist the state oil umpire to make the flow tests a success. The vote of the executive committee of the agency was unanimous. The agency first, last, and all time stands for co-operative effort in the industry, and believes that if a movement is launched in good faith by those vested with responsibility, that movement should be supported whole-heartedly and unsparingly. A half-hearted, incomplete flow test would be a blot on our industry. It would be inconclusive, giving rise to disputes. It would half prove a whole truth, or wholly prove a half truth. Therefore, the agency, without equivocation, approves the flow tests of those fields when the umpire calls for them. We urge all members of the agency, in any field where a flow test may have been ordered, to co-operate with the state oil umpire and uphold the Executive Committee for Equitable Curtailment, your own selected body in charge of the curtailment program."

Price Situation

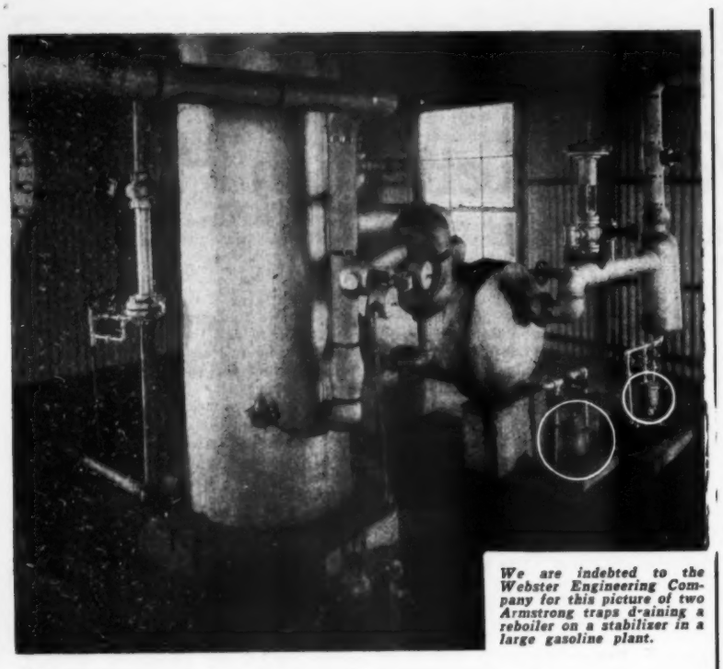
There was a very definite strengthening in the Southern California gasoline market during the past week and this favorable factor has had a tendency to stimulate the optimism of those in close touch with the industry. It is remarkable that such a marked change should occur within the short space of a few weeks. Executives of the major companies are not overoptimistic but are rather hopeful that independent refiners will recognize the folly of cutting prices to stimulate gallonage. A personal survey shows a decided change in the attitude of many independent refiners. Those contacted expressed the opinion that they are committed to a policy of better prices even though gallonage from a quantity standpoint is somewhat lower. A number of these independent refiners were hoping that producers would rigidly effect curtailment as the resulting smaller amount of crude available would reduce or practically eliminate the distress selling of gasoline during the coming winter months. If it were not for the fact that some of the smaller independent refiners are financially unable to store surplus production for a period of 30 or 60 days, prices could undoubtedly be maintained at a fairly stable level during the next few months. Because of the uncertainty existing with respect to the anticipated decline in consumption and the inability of smaller refiners to weather the storm without distress selling, it is rather hazardous to venture an opinion as to the possibility of maintaining stabilized quotations. In view of the failure of operators in the Playa Del Rey Field to exceed their rated potential daily productions, it would seem that producers hold the key to developments during the next few months. A strict adherence to curtailment will strengthen the position of all concerned and prevent a downward revision in crude oil prices. Major companies are desirous of keeping prices at their present level but if the refined oil

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	Sept. 24		Sept. 17			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	.....	.....	534,120	1,379,888
Gasoline	480,075	68,582	.....	.....	6,442,235	10,560,708
Kerosene	.....	.....	.....	.....	154,372	187,934
Foreign exports—						
Crude oil	62,221	8,889	214,322	30,617	6,164,764	5,696,383
Fuel oil	209,494	29,928	205,047	29,292	6,372,752	10,199,817
Diesel and gas oil	29,528	4,218	49,960	7,137	1,825,093	2,817,762
Gasoline	198,985	28,426	111,868	15,981	6,338,257	6,485,549
Kerosene	10,565	1,509	100,533	14,362	2,072,714	1,231,449
Lubricants	.....	.....	.....	.....	.....	36,353
Naphtha distillates	.....	.....	.....	.....	120,075	.....
Coastwise-domestic—						
Crude oil	192,095	27,442	265,002	37,857	10,632,038	16,826,511
Fuel oil	196,779	28,111	199,374	28,482	8,774,483	9,602,382
Diesel and gas oil	28,200	4,029	74,611	10,659	967,462	1,140,531
Gasoline	157,832	22,547	285,974	40,853	11,297,816	10,485,186
Kerosene	.....	.....	14,599	2,086	132,093	235,407
Naphtha distillates	.....	.....	.....	.....	.....	4,952

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	79,840	11,406	.....	.....	483,201	.....
Gasoline	191,567	27,367	.....	.....	844,423	732,169
Kerosene	.....	.....	.....	.....	75,760	.....
Lubricants	.....	.....	.....	.....	23,829	35,236
Foreign exports—						
Crude oil	.....	.....	.....	.....	707,651	249,081
Fuel oil	.....	.....	.....	.....	798,098	1,285,726
Diesel and gas oil	.....	.....	.....	.....	519,332	435,298
Gasoline	70,115	10,016	107,304	15,329	2,741,900	3,372,574
Kerosene	10,680	1,526	.....	.....	768,230	688,272
Lubricants	.....	.....	.....	.....	30,094	25,693
Coastwise-domestic—						
Fuel oil	62,591	8,942	108,822	15,546	2,226,050	2,683,346
Diesel and gas oil	.....	.....	8,871	1,267	321,433	346,660
Gasoline	43,280	6,183	7,498	1,071	2,774,572	3,344,886
Kerosene	.....	.....	.....	.....	84,546	250,541
Naphtha distillates	.....	.....	.....	.....	.....	49,780



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market breaks due to the failure to observe curtailment crude oil prices will reflect a sympathetic weakening. It is imperative that operators abide by curtailment regulations as it is obvious that any general deflection must eventually be productive of unfavorable results.

Lost Hills-Belridge

The Belridge Oil Co. completed a new well in the North Belridge Field of Kern County a few days ago and a second well is scheduled for completion within 30 days. The new well chalked up by the Belridge Oil Co. was No. 27-35, which was brought in under a natural flow doing 1,660 bbls. of clean 38.6 gravity oil and 3,780,000 feet of gas per day from 5,491 feet. This well was finished with a 6⅝-inch liner carrying 310 feet of perforated but will not be allowed to produce to its maximum as the Belridge Oil Co., in conjunction with other operators in the North Belridge Field, is adhering strictly to the curtailment program. The Belridge Oil Co.'s new producer was finished in the Temblor as a gentlemen's agreement prohibits operators from exploiting the deeper zone, generally believed to be of Eocene age. The Lost Hills Field has been relatively quiet for several months due to the absence of any deep exploratory wells but it would not be surprising if a new test was started in this area during the next few months. There has been a movement to provide sufficient dry hole money to justify the drilling of a deep test in the Lost Hills Field but no definite plans have been formulated.

Kettleman Hills

Two new wells are expected to be chalked up in the Kettleman North Dome Field in the next 30 days and since both are within proven territory commercial production may be anticipated. The next well to be finished in this area should be the Kettleman North Dome Association's No. 38-34-J, as this potential producer is coring in oil sand at 8,242 feet. Kenda has decided to make No. 36-30-J a deep test and is coring continuously. This well, in Section 30-21-17, was down 9,125 feet a day or so ago. The Standard's next completion in the North Dome should be No. 67-19-J, as this project is rotating at 8,094 feet. The North Kettleman Oil & Gas Co. logged a rather favorable showing in No. 1 Lillis-Welsh at 9,019 feet but drilling operations are going ahead as the company's objective is the Ochsner, or black oil zone. This well has penetrated a little more than 1,000 feet below the top of the Temblor and is correlating approximately 1,200 feet deeper than wells finished in the Huffman area. No. 1 Lillis-Welsh, the most westerly project to be started in the Kettleman North Dome Field up to the present time, is nearing the critical depth and petroleum engineers appear to be rather skeptical as to the success of this undertaking. Ed McAdams is of the opinion, however, that commercial production will be developed and his opinion is confirmed by several petroleum engineers who are watching the progress of work. Judging by its present depth, No. 1 Lillis-Welsh will probably not be completed much above the 10,000-foot level. The Union Oil Co. is making satisfactory progress in No. 2 Amerada King, a new well which is being drilled in the Huffman, or western end of the North Dome, and it should be tanking oil possibly around the middle of November.

Mount Poso

The Modoc Petroleum Co. successfully finished No. 2 Vedder, a new well in the Mount Poso Field of Kern County early in the past week and this new producer is pumping 98 bbls. of relatively clean 18.6 gravity oil per day from 1,530 feet. This well was given a preliminary production test during the latter part of September but sanded up after being on production for approximately 24 hours. The Pongratz Oil Co. is conducting a pumping test on No. 1 Tabis, a recent completion at 1,503 feet, but the well pumped off in a few hours and may require another few days before an accurate gauge figure is available of its settled production. In the Round Mountain Field the Coffee Oil Co. is rigging up well No. 3 but this project has not yet been spudded in. Drilling operations in the Fruitvale Field of Kern County have been easing off a little during the past few weeks and it appears probable drilling operations will be a lower rate during the next several months. Recent completions have showed a relatively smaller initial daily production and this, together with the difficulty being experienced in completing a few new wells, should have a tendency to retard future development. In the Midway-Sunset Field of Kern County the Standard Oil Co. is held up with mechanical trouble in No. 1 Mascot, a deep test being drilled in Section 26-32-23. No. 1 Mascot is being delayed pending the recovery of drill pipe which twisted off at 9,398 feet while the bit was rotating ahead at 9,690 feet. Fred Turner has completed No. 2 Bull in the Midway-Sunset Field and this new producer is pumping 171 bbls. per day from 1,500 feet.

Buttonwillow

The Milham Exploration Co. added a new well to its producers in the Buttonwillow gas field of Kern County when No. 41-17 was brought in several days ago doing 7,032,000 feet of gas per day from 2,532 feet. This well was originally bottomed at 2,648 feet but was wet on the preliminary production test and was accordingly plugged back to the completion depth, 2,532 feet. The Milham Exploration Co. has 18 wells in the Buttonwillow gas field capable of going on commercial production and unless something unforeseen develops this field will become a factor of importance for the first time when production is opened up during the coming winter. The decline in gas production of Los Angeles Basin fields and the decision of operators in

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S-T-R	Depth	Status
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	7,414	suspended
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,238	suspended
Co-operative Dev. Co., No. 1 Del Rey, Los Angeles Co.	26- 2-15	5,146	sd. sh. drilling
Playa Del Rey Corp., No. 1 Del Rey, Los Angeles Co.	24- 2-15	....	material
Palm Ridge Oil Co., No. 1 Palms, Los Angeles Co.	2- 2-15	522	to set pipe
Hogan, N. S., No. 1 Hawthorne, Los Angeles Co.	23- 3-24	101	suspended
Lawndale Pioneers, Inc., No. 1 Peck, Los Angeles Co.	20- 3-14	6,378	suspended
Baldwin Oil Co., No. 3 Inglewood, Los Angeles Co.	7- 2-14	5,696	fishing
Baldwin Hills Synd., No. 1 Inglewood, Los Angeles Co.	17- 2-14	4,090	suspended
Kyle, W. A., No. 1 Inglewood, Los Angeles Co.	7- 2-14	4,000	testing
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	2,860	suspended
Durgin & Allen, No. 1 Spadra, Los Angeles Co.	33- 1- 9	1,530	br. sh. drilling
Jones, W. L., No. 1 Bell, Los Angeles Co.	31- 2-12	2,316	sd. sh. drilling
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	6- 2-11	5,060	suspended
McNeil, A. W., No. 1 Montebello, Los Angeles Co.	7- 2-11	rig	suspended
Hutchinson & Andrus, No. 1 El Monte, Los Angeles Co.	11- 1-11	rig	rigging up
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,919	suspended
Caballero Estates, No. 1 Calabasas, Los Angeles Co.	23- 1-16	1,604	suspended
Smith, J. H., No. 1 Hasley, Los Angeles Co.	32- 5-17	3,212	suspended
Marble, Willard, No. 1 Chatsworth, Los Angeles Co.	6- 2-16	1,396	suspended
Ball, W. T., No. 1 Newhall, Los Angeles Co.	24- 3-16	3,399	suspended
Ajax Pet., No. 1 Newport, Orange Co.	21- 6-10	7,259	suspended
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	1,976	suspended
Mineral Exploration, No. 1 Capistrano, Orange Co.	8- 8- 7	3,540	sd. sh. drilling
Orangethorpe Pet., No. 1 Brea, Orange Co.	12- 3-10	4,560	suspended
Spindletop Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,590	suspended
Duncan, N. I., No. 1 Sagebrush, Riverside Co.	8- 4- 6	1,157	suspended
Colan Dev. Co., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	suspended
Great American Pet., No. 1 Chino, San Bernardino Co.	18- 2- 8	....	material
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-17-15	680	sd. sh. drilling
Woods, D. H., No. 1 Salton Sea, Imperial Co.	7-11-16	774	sd. sh. drilling
San Felipe Oil Co., No. 1 Borega, San Diego Co.	25-11- 8	mtl.	building rig
Borderland Oil Co., No. 2 Encinitas, San Diego Co.	29-16- 4	2,677	suspended
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18- 2	1,243	suspended
Shannon, G. H., No. 1 Kearney, San Diego Co.	14-15- 3	446	suspended

the Ventura Avenue and Kettleman Hills Fields to maintain effective curtailment will make it possible for Buttonwillow to go on commercial gas production during the coming winter. It is probable also that the Goleta gas field of Santa Barbara County will also begin commercial gas production during the winter. The Dudley Ridge-Tulare Lake region is still an unknown quantity so far as commercial gas production is concerned and while several fairly good gas wells have been completed in the Dudley Ridge gas field, it remains to be seen whether they can develop a sufficient gas pressure to buck the operating pressure of the gas transmission lines and thus become a factor of consequence. The General Petroleum, which recently recompleted No. 1 Morris in the Buttonwillow gas field, expects to list No. 2 Morris for completion some time within a few days and this project, together with other previous completions at Buttonwillow, will go on commercial gas production for the first time.

Playa Del Rey

The decline in drilling operations at Playa Del Rey during the year has had a tendency to indicate that this field will not sustain any additional development. Such is not the case, however, as both the Union and Ohio Oil Co. still have additional undeveloped acreage. The Playa Del Rey Hills Oil Corp. has started rig construction for a new well in the extreme eastern part of the field and spud is expected to be made some time during the next 10 days. Its significance lies in the fact that it will extend the eastern limits of the field if commercial production is secured and automatically prove the intervening territory between this outpost and the Union Oil Co.'s No. 1 Vidor. The Playa Del Rey Hills Oil Corp.'s new lease consists of 18½ acres east of the Union's Vidor lease and extends to the base of the Del Rey hills. This outpost may result in commercial production as the Union's No. 1 Vidor, the most easterly producer in the Playa Del Rey Field up to the present, came in doing approximately 500 bbls. per day upon completion early last year. The oil sand cored in No. 1 Vidor was exceptionally well saturated and the well might have shown substantially higher production but it was shut in immediately upon completion without being given a production test. The Union's offset to No. 1 Vidor, about 600 feet away, was good for over 1,000 bbls. per day and upon completion extended the productive limits about 1,500 feet east. The Union is drilling a second well on the Vidor property in the Playa Del Rey Field but this potential producer is not scheduled for completion until late in November.

The Republic Petroleum appears to have been unsuccessful in its attempt to develop commercial production on the Childs lease in the Dominguez Field as its No. 1 has been wet with clocklike consistency. The Republic acquired this property after it was quitclaimed by the Shell Oil Co. following the inability to develop clean production. No. 1 Childs of the Republic Petroleum was carried down to 6,094 feet but has been plugged back and alternately tested by stages from the bottom of the hole up to the shoe of the 8⅝-inch casing landed and cemented at 5,337 feet. The zone between 5,337-6,094 feet was predominantly wet and the company is accordingly making preparations to perforate for tests in zones above the 5,337-foot level. The Union is working on two wells in this field and one, No. 5 Carson, should be finished in the near future.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S-T-R	Depth	Status
Standard, No. 1 Santa Rosa Island, Santa Barbara Co.	unsurveyed	3,670	hd. sd. drilling
Field Gasoline Co., No. 1 Lompoc, Santa Barbara Co.	[illegible]	2,062	set pipe
Lee, W. M., No. 1 Lompoc, Santa Barbara Co.	28- 8-34	....	material
Superior Oil Co., No. 3 Santa Maria, Santa Barbara Co.	1- 9-33	673	abandoned
Superior Oil Co., No. 4 Santa Maria, Santa Barbara Co.	36-10-33	241	core hole
Wilson, N. S., No. 1 Los Angeles, Santa Barbara Co.	2- 7-35	4,979	suspended
Equity Oil Co., No. 1 Coal Oil Point, Santa Barbara Co.	24- 4-29	3,750	suspended
Bolsa Chica, No. 1 Coal Oil Point, Santa Barbara Co.	25- 4-29	5,510	plug 4,031 feet
Deuel & Associates, No. 1 Naples, Santa Barbara Co.	7- 4-29	5,134	suspended
Oakburn Oil Co., No. 1 Capitan, Santa Barbara Co.	tideland	2,821	cleaning out
Casitas Oil Co., No. 1 Carpinteria, Santa Barbara Co.	tideland	461	sd. sh. drilling
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara o.	12-10-27	1,010	br. sh. drilling
Universal Consolidated, No. 1 Rincon, Ventura Co.	4- 3-24	4,806	sd. sh. drilling
Indian Pet., No. 1 Rincon, Ventura Co.	tideland	....	building pier
Sovereign Oil Co., No. 1 Fillmore, Ventura Co.	23- 4-19	....	material
Honolulu Consolidated, No. 1 Miguelito, Ventura Co.	23- 3-24	....	material
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20- 4-21	317	rig cable tools
Superior Oil Co., No. 1 Timber Canyon, Ventura Co.	13- 4-21	4,378	sd. sh. drilling
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	2,060	hd. sd. drilling
Los Posas Pet. Co., No. 1 Los Posas, Ventura Co.	22- 2-20	....	location
Hay Petroleum, No. 1 Weed Patch, Kern Co.	22-30-29	....	location
General Pet., No. 2 Buttonwillow, Kern Co.	6-28-23	2,280	set pipe
Milham Exploration, No. 18 Buttonwillow, Kern Co.	17-28-23	2,560	7,000,000 ft. gas
Milham Exploration, No. 19 Buttonwillow, Kern Co.	8-28-23	rig	rigging up
Purman, T. H., No. 1 McKittrick, Kern Co.	32-29-21	4,610	suspended
Welport Oil Co., No. 2 McKittrick, Kern Co.	19-29-21	640	fishing
Ozena Oil Co., No. 2 McKittrick, Kern Co.	27-29-21	2,890	showing gas
General Pet., No. 1 Belridge, Kern Co.	30-28-21	8,260	suspended
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,222	suspended
Cumberland Oil Co., No. 2 Devil's Den, Kern Co.	17-26-18	3,263	suspended
Hallaway, A. S., No. 1 Devil's Den, Kern Co.	11-25-18	675	cleaning out
Hannah, Tom, No. 1 Devil's Den, Kern Co.	25-25-18	3,516	reaming
Pyramid Hills Oil Co., No. 1 Devil's Den, Kern Co.	24-25-18	1,724	suspended
Fowler, F., No. 1 Blackwell Corner, Kern Co.	15-26-19	3,170	suspended
Regina Oil Corp., No. 1 Mojave, Kern Co.	26-10-14	3,152	suspended
Harding, J. B., No. 1 Mojave, Kern Co.	5-10-10	1,030	suspended
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	6,025	suspended
Descanso Oil Co., No. 1 Tejon, Kern Co.	31-11-19	2,749	suspended
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-16-23	2,970	suspended
Kent & McDonald, No. 1 Carrizo Plains, S. Luis Obispo Co.	3-32-22	2,860	suspended
Emerich Oil Co., No. 1 Carrizo Plains, San Luis Obispo Co.	22-32-22	1,841	suspended
Trav-El Oil Co., No. 1 Carrizo Plains, San Luis Obispo Co.	7-32-22	2,450	suspended
Indian Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	26-31-12	3,352	suspended
Martin, J. D., No. 3 Edna, San Luis Obispo Co.	5-31-13	411	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,191	suspended
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	1-29-12	1,650	suspended
Shell, No. 1 San Miguel, San Luis Obispo Co.	4-25-12	2,816	hd. sd. drilling
Pacific Inland, Well No. 1, Monterey Co.	19-23-15	2,441	suspended
Brown, W. F., No. 1 Parkfield, Monterey Co.	15-23-14	1,051	suspended
Thomas Pet. Co., No. 1 Parkfield, Monterey Co.	31-22-14	198	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Woodward, Glen, No. 1 Dudley Ridge, Kings Co.	32-22-20	775	suspended
Scott Bros. Drlg. Co., No. 1 Dudley Ridge, Kings Co.	18-22-19	1,843	suspended
Lacal Natural Gas Co., No. 1 Dudley Ridge, Kings Co.	32-22-20	341	suspended
Kettleman Natural Gas Co., No. 1 Dudley Ridge, Kings Co.	18-22-10	1,100	suspended
Irma Investment Co., No. 2 Dudley Ridge, Kings Co.	7-23-20	1,224	suspended
Triune Oil Co., No. 1 Dudley Ridge, Kings Co.	5-23-20	1,098	suspended
Dudley Dome Oil Co., No. 1 Dudley Ridge, Kings Co.	9-23-20	478	gr. sh. drilling
Eagle Oil Co., No. 2 Dudley Ridge, Kings Co.	15-23-20	1,342	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	5,812	sd. sh. drilling
Kettleman Ridge Oil Co., No. 1 Avenal, Kings Co.	10-23-16	1,148	suspended
Magee & Stone, No. 1 Alpaugh, Kings Co.	34-24-22	5,060	suspended
Western Resource Corp., No. 3 Dudley Ridge, Kings Co.	12-23-22	1,840	suspended
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-24-27	2,200	suspended
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Sheldon & Gholson, No. 1 Portersville, Tulare Co.	34-22-27	962	testing
Hayman Oil Co., No. 1 Portersville, Tulare Co.	17-23-28	380	suspended
Ellis Sanford, No. 1 Tulare Lake, Tulare Co.	20-24-23	1,490	suspended
Napa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 3	3,238	sd. sh. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,808	sd. sh. drilling
Hilderbrandt, R., No. 1 Crows Landing, Stanislaus Co.	36- 6- 7	1,130	suspended
Rushing Oil Co., No. 1 Waterford, Stanislaus Co.	20- 3-13	2,040	sd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo Co.	23-12- 3	3,045	suspended
Easton & Monell, No. 1 Colma, San Mateo Co.	25- 3- 6	3,130	suspended
Bergman, Harry, No. 1 Dos Palos, Merced Co.	12-12-11	....	material
Los Banos Pet., No. 1 Los Banos, Merced Co.	26-10- 9	rig	suspended

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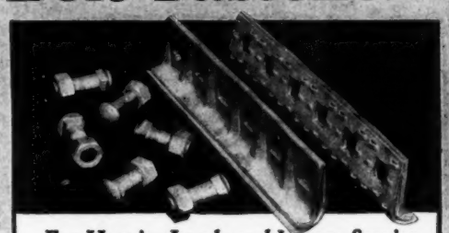

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Jacob Pool in Northeastern McMullen County Is Offsetting Discouraging News From Tuleta

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Oct. 10.—Prospects that the Jacob Pool in northeastern McMullen County is to contribute to bring about a lease and wildcat play down across the county in the direction of the Government Wells Pool in Duval County rather tends to offset discouraging news from the Tuleta Pool in Bee County. There is also indication that considerable additional development is to continue in the Saxet Field in Nueces County.

J. Stanley Smith's No. 1 Weiss, 2 miles northeast of the Tuleta Pool in Bee County, got the sand at 4,207-33 feet but it was dry. It corresponds to the sand in the Tuleta Field at 3,988-4,130 feet. Smith is drilling deeper, and it has a chance at two other sands but as contributing to anything in the way of extending the Tuleta sand it is a failure.

During the week C. R. & M. Oil Co. and O'Neil's No. 1-A Harris about one location southeast of the discovery well of the Tuleta Field came in after being rocked with gas but made only a comparatively small well. It is estimated at 80 to 100 bbls.

This leaves drilling only Nichols and C. R. & M.'s No. 2 Harris, a west offset to Coquat & Hawn's No. 1 Harris and located about 1,000 feet south and 600 feet west of the discovery well. It was about deep enough the first of the week to begin coring for the sand. As a partial offset to the discouraging news The Texas Company's No. 1 Cox, 600 feet west and 250 feet south of the discovery well, the first completion after the discovery well was brought in and came in a big gas well, was opened and on a 24-hour test made about 10,000,000 feet of gas and 52 bbls. of 62 gravity oil. The oil is higher gravity than that in the discovery well and was practically gasoline but had a straw color.

In the Pettus area there are several producing spots, the Pettus Field proper being a fairly good sized pool, about 2½ miles long by about a half mile wide, but a short distance from it are four other spots of a few wells each. The new Tuleta Pool is 3 miles south of the Pettus Pool and it may be a mere pimple with the chance that a real pool of consequence will develop near it.

Jacobs Pool

F. B. Lefevre made location the past week for No. 1 Leonard Jacob in the W. D. Benham Survey in northeastern McMullen County about 1½ miles south and a little west of the discovery well of Jacob, Buzzini & Pickett in the Jacob Pool in northeastern McMullen County. Other than Longhorn Oil Co.'s No. 1 Lark, a little southeast of the discovery well and now in course of completion, this is the first drilling in the area by other than the discoverers of the pool.

About 500 bbls. of oil a day is being trucked from five wells in the Jacob Pool to Whitsett in Live Oak County, about 8 miles east and shipped by rail to a refinery in the Houston area, the five wells having an average of around 900 feet. The wells are flowing by heads but make very little gas and cost of completing a well in the tank is only about $1,500.

In connection with the Government Wells area in Duval County this makes the territory diagonally southwest across McMullen County inviting to the wildcatter and there are a lot of them going in and hunting for acreage on structures. The territory along the Reynosa Escarpment and for a distance of several miles northwest and southeast of it covers all this region.

Arrangements are being made for a 4-inch pipe line to Whitsett and a loading rack on the Missouri Pacific Railroad and a considerable development of the new pool is expected as the market for the crude widens.

This field is about 2 miles southeast of the old Crowther Field and is about 4 miles north of the more recent Calliham Field. It may be producing from the Pettus sand, though much shallower because up the dip many miles.

Considerable pains and no hurry was taken in completing the first wells in the new field. The first well was completed early in the summer and the five wells have been on production long enough now to indicate staying qualities. One well on gauge flowed approximately 10 bbls. an hour for 36 hours. A sixth well is being completed.

Wells in the Calliham Field discovered in 1922 came in, many of them at around 800 feet, for 200 bbls. daily for a time but did not seem to hold up as well as the tests in the new field are holding up.

About 6 miles northeast of this field J. A. Harper's No. 1 fee, a little north of Fant City in Live Oak County, cored several feet of sand under lignite and is setting casing. This is in a sand horizon higher in the geological column than the production in the Jacob Pool. The showing indicated possibilities of another pool opening in the district.

The Jacob Pool has been producing long enough now that wildcatters are connecting up the territory across the entire length of McMullen County with the Government Wells Pool in Duval and are quite active in getting leases. Considerable wildcat drilling is inevitable in this stretch of 50 miles or more.

Balcones Fault Zone

Rains have continued to hinder field work all over Southwest Texas during the past week. Early in the week 8 inches of rain fell in 30 minutes in northern Live Oak County and the territory around.

In the Balcones fault zone the four deep tests to go to the Edwards lime, one of them scheduled for a 7,000-foot hole, have made little progress toward getting started. In Guadalupe County two tests are right at a depth where they ought to tell something interesting soon. H. A. Suttle's No. 1 Halm at 1,825 feet has not found the chalk though a test drilled 500 feet east of it a few years ago topped the chalk at 1,622 feet. The Suttle well should cut the fault plane soon if it gets the Edwards lime high on the upthrow side. This well is a few miles north of the Sal-Mar Pool 6 miles east of Seguin.

J. T. Stover's No. 1 Paul Hoffman, 2 miles west and half a mile south of the Sal-Mar Pool, at 1,892 feet, was temporarily held up with a fishing job. It is due to get the chalk soon if it gets it high. In the Sal-Mar Pool the chalk is topped at a little below or right at 2,000 feet.

Saxet Pool—Nueces County

Two tests in the Saxet Field in Nueces County are in sand, one at 4,867 feet and the other at 4,889 feet and trying to bring in producers. This sand has been cored in other tests and carried oil but no producer completed in it yet. Neil, Milton & Kepley's No. 1 Roark made a big showing in it and flowed on drill stem test but failed to produce afterward, probably due to mechanical trouble and failing to get the casing set right.

Oso Drillers' No. 3 Roark, about two locations west of it, is setting casing at 4,867 feet to give this sand another test. Gulf Coast Oil Co.'s No. 2 Perkins & Lagasse, 2 miles west of it and in the northern edge of the field, set casing at 4,875 feet with total depth 4,889 feet and should be ready to test over the coming week-end. Coast wells are given a full 10 days and more for the cement to set.

It is understood that Earl Calloway will do some drilling in Nueces County and that William F. Morgan will also do some wildcatting and that there will be a continuation of drilling in the proven Saxet Field. Gulf Port Oil Co.'s No. 2 Bliss' in the north central part of the field, had a sand at 4,694-97 feet which was something new for the field but was unable to get a good drill stem test of it and is coring deeper.

Wildcat Operations in Southwest Texas

Week Ending October 8

ATASCOSA COUNTY

Company, farm and location—	Remarks:
American Central Oil Co.'s No. 2 Mary McConnell, 150 ft. W of E line, 300 ft. S of No. 1, Blk. 138, W. C. M. Baker Sur., 3 miles W and 6 miles S from Somerset	T.D. 1,660 ft.; rig moved off.
G. W. Partee's No. 1 McCowan on intersection of Sections Nos. 38, 39, 48 and 49 of Subd. of Houlihan Sur.	T.D. 875 ft.; drlg.

BANDERA COUNTY

F. A. Brown's No. 1 R. B. Watson, 600 ft. N of cen. of S line of Sec. 71	T.D. 330 ft.; drlg.
E. A. Parkford's No. 1 Duke in NW cor. of Sec. 7, G.C.&S.F. Sur.	Location.

BASTROP COUNTY

J. E. Emanuel's No. 1 H. Klemm, 817 ft. from W line, 300 ft. from S line of tract in R. S. Teal Sur.	Location.
Marts & Beavens' No. 1 Sloop, 150 ft. from W line, 900 ft. from S line of tract in J. Burleson Sur.	T.D. 2,010 ft.; drlg.
Properties Trading Co.'s No. 1 Henry Freitag, 400 ft. from SE line, 1,800 ft. from NE line of P. Conley Sur.	T.D. 2,070 ft.; S.D.
Texas and Gant's No. 1 Mikulec, 330 ft. to NW and SW lines of tract in Wm. Barton Sur.	Contract for 7,000-ft. test into Edwards. Derrick up.

BEE COUNTY

Fitzgerald & Pryer's No. 1 Albert Johnson in M. Alcarte Sur.	Rigged up and S.D.
Nichols & Bruner's No. 1 Grover Heidenfels in John Bryan Sur., 891 ft. from S line, 1,950 ft. from E line of tract	T.D. 2,100 ft.; S.D. for fuel.
Southwest Drlg. Co.'s No. 1 Riggs, 200 ft. from N line, 4,200 ft. from E line of James Nowland Sur.	Location.
J. Stanley Smith's No. 1 Weiss, 3,096 ft. E of E line of Sec. 1, Ragsley Subd., and 290 ft. from N line of Uranga grant	T.D. 4,340 ft.; drlg.

BELL COUNTY

Alex Krause' No. 1 W. P. Edds, 650 ft. from S line, 150 ft. from W line of 100-acre tract in M. Moreno Sur.	T.D. 712 ft.; S.D.
James Scoggins' No. 2 Warrick, Ingram Sur.	T.D. 1,432 ft.; cleaning out.

BEXAR COUNTY

Amsden-Ingersoll-Miller's No. 1 Strumberg, 450 ft. to W line, 1,020 ft. to N line of tract, 12 miles SW of San Antonio	T.D. 1,054 ft.; standing.
S. W. Blount's No. 1-A S. A. Land & Dev. Co., 10 ft. from No. 1 in I. Peres Sur.	T.D. 965 ft.; moving in rotary
Robert C. Hill's No. 1 Schell, 1,300 ft. from N line, 1,100 ft. from W line of 161-ac. tract in Sec. 234, Perretaux Sur.	Drlg. 805 ft.
Rollin V. Hill, Sr.'s No. 1 Max Boeck, 1,700 ft. from N line, 2,700 ft. from E line of tract in J. R. Shepherd Sur.	T.D. 150 ft.; S.D. acct. rain.
Kistler's No. 1 Emma Pierce, 1,550 ft. from NW cor. and 350 ft. SE of SW lines of 49½ acres in Cortaris Sur. No. 1	Location.
Linda Oil Co.'s No. 1 John and R. S. Watson, 600 ft. from S line, 150 ft. from E line of 200.7-ac. tract in Cruise Landin Sur.	T.D. 1,525 ft.; abnd.
Dr. Ewell Neil's No. 1 J. Watson, 600 ft. from W line, 1,700 ft. from S line of B. Martinez Sur.	T.D. 2,495 ft.; in Edwards dry
Jones & Voltz' No. 1 Bonkowsky, 150 ft. to N and W lines of William McMeneness Sur., 12 miles E of San Antonio	T.D. 907 ft.; standing.
Linda Oil Co.'s No. 1 Watson, 150 ft. from E line, 600 ft. from S line of tract in Cruz Landin Sur.	T.D. 1,360 ft.; drlg. in gumbo.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio	T.D. 1,330 ft.; S.D.
M. E. Trussell's No. 1 L. B. Carruthers, Sr., 2,000 ft. from W line, 400 ft. from most easterly N line of tract in Sam McCullough Sur.	T.D. 896 ft.; tested salt water.

BLANCO COUNTY

Hardy Sitton's No. 1 Luders, 150 ft. from S line, 1,420 ft. from E line of James Stanford Sur.	T.D. 1,540 ft.; standing.

BROOKS COUNTY

M. P. Evans' No. 1 J. M. Martinez, 200 ft. from N and W lines of Blk. 11, Sec. 6, La Encantada Sur.	T.D. 1,480 ft.; standing.

(Continued on Page 76)

FIELD TRIP INTO MEXICO

SAN ANTONIO, Tex., Oct. 8.—A field trip into northern Mexico, following a dinner and technical session at the Plaza Hotel in Laredo will be made by the San Antonio Geological Society the middle of October. The dinner will be at 7 p.m. Friday, October 14, and the technical session will follow immediately after the dinner.

The field trip will start the next morning, going down the Rio Grande to Roma, studying the Claiborne section and crossing into Mexico and studying the lower Tertiary section at Mier, General Trevino, Agualeguas and part of the Upper Cretaceous between Agualeguas and Sabinas Hidalgo. Sunday the Cretaceous section will be studied between Monterrey and Saltillo.

Penn Mex Fuel Purchased By Consolidated Oil Corp.

The Consolidated Oil Corp. has contracted to purchase the majority interest of the South Penn Oil Co. in the Penn Mex Fuel Co. The consideration involved in addition to paying about $1.01 a share in cash, provides for an annual royalty of about 30 cents a barrel on the 1,000,000 bbls. of oil produced over 1,400,000 and 20 cents a barrel for oil in excess of 2,400,000 bbls.

It was through South Penn as trustee that Consolidated succeeded in buying 216,000 shares of the 400,000 shares outstanding. The remaining 194,000 shares are held by scattered interests.

The minority interest in the Penn Mex Fuel Co. has the privilege of selling its shares to Consolidated Oil on the same terms as South Penn, provided the offer is accepted within 30 days from October 1. On October 1 Penn Mex declared from assets a dividend of $5.18 a share.

The Penn Mex Fuel Co. controls between 150,000 and 160,000 acres of leases in Tampico and Tuxpan Fields in Mexico, which will be developed by Consolidated.

Consolidated Oil has large oil properties in Mexico, a big part of which was acquired when the corporation took over the properties of the Pierce Oil Co. a few years ago. It is believed much of the crude oil produced from Penn Mex Fuel's properties will be refined in Mexico to avoid the tariff on imports into this country. It is understood that one of South Penn's reasons for selling its interest in Penn Mex Fuel was the tariff.

Purchase of control of the Penn Mex company by Consolidated Oil is expected in Wall Street oil circles to be followed by the early extension of a loan to the government of the republic of Mexico by leading oil companies.

Mexico is seeking a $10,000,000 loan including an advance of $3,500,000 already made by the Standard Oil Co. of California. Three other companies, the Consolidated Oil Corp., Standard of New Jersey and Dutch-Shell groups, are negotiating for the balance of the loan with Finance Minister Pani. An agreement was reported reached on all but a few details. It was understood in oil trade circles that the advance would be in the nature of a tax anticipation loan.

Albert E. Watts, vice president of Consolidated corporation in charge of the Sinclair companies in Mexico, said that Mexico's credit with the oil companies was high.

"Never in the history of American investment in Mexico has the Mexican government defaulted on a dollar of principal or interest on loans advanced by the oil companies," he noted.

Included in these loans, he said, was one by E. L. Doheny for $9,000,000 to the Obregon government just after he came into power.

The Penn Mex company, under Sinclair direction, it was said, would continue to confine its operations almost solely to the Mexican territory.

Kansas Fields

(Continued from Page 54)

No. 1 Douglas, C SE NE, Section 29-28-12, was abandoned at 1,827 feet.

Finney County

National Refining Co.'s No. 1 Wells, C SW, Section 13-23-30w, was abandoned at 5,872 feet.

Greenwood County

Henderson & Holden's No. 4 Hess, NW cor. SE NW, Section 34-22-11, is a machine. A. M. Landon and others' No. 5 Smith, SE cor. SW NW, Section 8-23-12, is a location. Smith and others' No. 2 Hess, NW cor. SW SW NE, Section 34-22-11, was drilling at 75 feet. Theta Oil & Gas Co.'s No. 9 Rouser, NW cor. SW, Section 23-22-12, an old well drilling deeper, made 10 bbls. from 1,711-12 feet.

Harvey County

Skelly Oil Co.'s No. 1 Martens, SE cor., Section 19-22-3w, is a rig. McBride, Inc.'s No. 2 Freisen, NW cor. SW, Section 20-22-3w, made 68 bbls. an hour from Hunton lime at 3,489-3,505 feet. Phillips Petroleum Co.'s No. 1 Warkentine, NW cor. SW SW, Section 20-22-3w, made 1,033 bbls. from 3,481-95 feet.

McPherson County

Rosespring Drilling Co. and others' No. 1 Dick, NW cor. NE, Section 21-21-3w, is a location. Same company's No. 1 Neufeldt, NE cor. NW, Section 21-21-3w, is a location. Slick and others' No. 1 Gratton, NE cor. NW NW, Section 34-20-3w, an old well drilling deeper, made 80 bbls. from 3,483-93 feet. Barnsdall Oil Co.'s No. 1 Bridgens, SW cor. SE, Section 35-19-3w, made 1,440 bbls. from 2,994-3,045 feet. Shell Petroleum Corp.'s No. 2 Lawrence, SW cor. NE NW, Section 35-19-3w, made 135 bbls. of oil from 2,970-3,052 feet. Derby and others' No. 3 Unruh, NW cor. SE, Section 26-19-2w, made 516 bbls. from 3,382-3,416 feet. Rosespring Drilling Co.'s No. 2 Dielman, NE cor. SW, Section 35-19-2w, made 1,686 bbls. from 2,936-58 feet. Phillips Petroleum Co.'s No. 2 Hindmarsh, SE cor. SW SW, Section 30-19-1w, made 726 bbls. from 3,426-39 feet.

Rice County

Libon & Weaver's No. 1 Collis, SW cor. SE, Section 16-19-9w, is a location.

Russell County

J. J. Hall and others' No. 1 Miller, NE cor., Section 31-14-13w, is a rig. Liggett and others' No. 1 Hines, C NW NW, Section 16-11-15w, was digging cellar.

Sedgwick County

Derby Oil Co.'s No. 7 Eastbor, NE cor. SW NE, Section 19-27-2, is a rig. Continental Oil Co.'s No. 2 Brown, CSL NW SW, Section 15-25-1, was abandoned at 3,477-3,502 feet. Old Trails Oil Co.'s No. 1 fee, CSL SE SE, Section 27-27-1, made 2,500,000 feet of gas from 1,490-1,504 feet.

Stevens County

Louisville Gas Co.'s No. 1 Phillips, C SE, Section 11-35-35w, is a rig.

PIPE LINE FROM GUEYDAN

HOUSTON, Tex., Oct. 10.—Pure Pipe Line Co. is laying 12 miles of 8-inch pipe from the Gueydan Field of Vermillion Parish, Louisiana, to a point on the Intercoastal Canal, where facilities will be provided for loading oil into barges for movement to the Pure Oil Co.'s refinery at Smiths Bluff, south of Beaumont, Tex. Gueydan is a new field owned by Pure Oil Co. The company so far has two producing wells.

MAY PETITION PINCHOT

BRADFORD, Pa., Oct. 8.—The Bradford Era says that petitions are being circulated among individual oil producers and producing companies to have Governor Pinchot intercede in the local oil fields so that the price of Bradford crude will be protected.

Two years ago production in the field was put on a curtailed basis to stabilize the price but this plan has since been dropped. Crude oil demand has been light during the summer, oil men say, and prices have fallen.

BOOK REVIEW

"The Development of American Industries," is the title of an interesting book of 932 pages edited by J. G. Glover and W. B. Cornell and published by Prentice-Hall, 70 Fifth Avenue, New York City, upon the occasion of the one hundredth anniversary of the founding of New York University.

There are 39 industries described and illustrated. The chapter devoted to the petroleum industry, covering 136 pages, was prepared by R. C. Holmes and J. T. Duce of The Texas Corporation. This chapter mentions the early history of the oil industry, describes the period following the drilling of the Drake well, with the development of pipe lines, the early leaders in the business and the products of the first refineries. The important influence of the automobile, the first 1,000,000 appearing in 1913, on the industry is mentioned.

The chapter is illustrated with maps, charts and tables showing the world-wide standing of the industry today, with the location of the producing areas and the refineries. There are special sections devoted to development, transportation, refining processes, marketing, financing and organization. The price of the book is $5.

Wildcat Operations in Kansas

(Continued from Page 54)

Herndon, Blair, Deep Rock, No. 1 Santa Fe, C NW Sec. 19-23-1 ..... Drlg. 3,173 ft.

HASKELL COUNTY

Victor Martin et al's No. 1 Weeks, C NW Sec. 8-28-31w.. Rig.

KINGMAN COUNTY

Panhandle Drlg. Co.'s No. 1 Wetheral, C SE NW SW, Sec. 20-28-10w ..... Set 12-in. csg. 1,610 ft.; S.D.

LEAVENWORTH COUNTY

West et al's No. 1 Karb, C NW NE Sec. 32-10-21..... U.R. 928 ft.

MARION COUNTY

Farrell et al's No. 1 Williamson, C NW SE Sec. 21-19-4.. Machine.
Vernon et al's No. 1 Schmidt, C SW NW Sec. 35-19-1 .... Location

McPHERSON COUNTY

Darby Pet. Co.'s No. 1 Pankratz, NW SE Sec. 5-20-1 .... Drlg. 2,100 ft.
Snyder et al's No. 1 Carlson, SE cor. Sec. 4-19-3w..... S.D. 1,745 ft.
Detrick's No. 1 Dalke, NW SE Sec. 16-19-1 ..... Abd. 3,489 ft.
Sidwell et al's No. 1 Nichols, NE NW NW Sec. 28-17-1n.. S.D. 1,205 ft.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22, 34-43w ..... T.D. 3,640 ft.; temp. abd.

MORRIS COUNTY

Urschel et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7.. Drlg. 1,385 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w..... Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15..... S.O. 2,190-2,200 ft.; temp. abnd.

PRATT COUNTY

Ninnescah O. & G. Co.'s No. 1 Hardesty, SW SE SE Sec. 28-27-11w ..... Drlg. 2,954 ft.

RENO COUNTY

T. L. Johnson's No. 1 Crotts, NE NW NE Sec. 27-26-10w. Rig.
National Union's No. 1 Hill, NE SE Sec. 18-24-4w ..... Location.
Martin et al's No. 1 Yadu, C NW NW Sec. 15-24-5w..... S.D. 318 ft.

RICE COUNTY

R. Ramsey's No. 1 School Lot, NW SW NW Sec. 32-19-9w. Spudding.
Langston et al's No. 1 Wells, NE SE Sec. 4-20-9w..... Rig.
J. Liggett et al's No. 1 Thodel, C NW NW Sec. 11-21-7w.. S.D. 50 ft.

RUSH COUNTY

Barnsdall's No. 1 Schultz, SW cor. Sec. 3-19-16w..... Drlg. 3,420 ft.
Skelton et al's No. 1 Brock-Hartman, SW SE NE Sec. 4-18-16w ..... S.D. 50 ft.

SEDGWICK COUNTY

Scroggins et al's No. 1 Bartlett, NW SE NW Sec. 35-27-1 ..... S.D. 1,522 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW Sec. 27-7-26w..... H.F.W. 4,535-45 ft.; S.D.

STEVENS COUNTY

Argus Prod.'s No. 2 Christopher, C NE Sec. 10-33-39w.... S.D. 5,521 ft.;

STAFFORD COUNTY

Stringer et al's No. 1 Swindle, SW NE Sec. 2-25-11w..... Spud; S.D.

SUMNER COUNTY

Austin et al's No. 1 Fog, SW SE SE Sec. 14-34-1w..... Drlg. 3,300 ft.
Trees Oil Co.'s No. 1 Tompkins, SW Sec. 26-33-1 ..... Location.
Trees Oil Co. and Shell's No. 1 Springate, NE SE SW Sec. 6-34-2 ..... S.D. 3,629 ft.

Gulf Coast Fields and Wildcats

(Continued from Page 56)

Humble Oil & Ref. Co.'s No. 1 Kirby, Henry Griffith League, 208 ft. from S line and 100 ft. from E line of lease ..... Sand 1,320-25 ft.; losing returns.

Mills Bennett Prod. Co.'s No. 5 Means, Henry Griffith League, 200 ft. W of No. 4 ..... Drlg. cap rock 1,090 ft.

Mills Bennett Prod. Co.'s No. 5 Kirby, Henry Griffith League, 400 ft. from W line and 41 ft. from S line of tract ..... Cap rock 894-906 ft.; lost returns. cmtd. 13⅜-in. csg. 898 ft.

The Texas Company's No. 2 Wilburn (W.O.), Henry Griffith League, 70 ft. from N line and 330 ft. from E line of tract ..... Pulling screen to deepen 5,112 ft

Texas Gulf Prod. Co.'s No. 4 Ilfrey, Henry Griffith League, 894 ft. from E line in C of tract ..... Spudded.

Texas Gulf Prod. Co.'s No. 3-C Kirby, 562 ft. from W line, 50 ft. from S line of "C" lease ..... Set 51⅛ ft. of 7-in. screen 5,224 ft.; comp. flowing estimated 600 bbls. daily.

Texas Gulf Prod. Co.'s No. 11-A Kirby, Henry Griffith League, 1,090 ft. from W line and 225 ft. from S line of "A" lease ..... Salt 3,441 ft.; fishing.

Texas Gulf Prod. Co.'s No. 2 T. H. McLean, Henry Griffith League, 711 ft. from E line midway between C. Barber and McLean tracts on separating line ..... Salt 1,258-2,503 ft.; plugged to 1,181 ft.; drlg. salt 2,275 ft.

Texas Gulf Prod. Co.'s No. 2 O. K. Winfrey, W. D. Smith Sur., 295 ft. N of SW cor. of A. E. Barber lease and 100 ft. W of E line of Winfrey lease ..... Drlg. rock 3,532 ft.

Yount Lee Oil Co.'s No. 4-A Zadie Fisher, Wm. Bloodgood Sur., 301 ft. from W line and 96 ft. from S line of tract ..... Pulling screen 5,704 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 16 Mayes, E. H. R. Wallis Sur., 1,325 ft. N and 1,429 ft. E of No. 1 Lost River ..... Drlg. sand 643 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 34 Moore, Mark Smith Sur. ..... Drlg. hard sand 3,278 ft.

RABBS RIDGE—FORT BEND COUNTY

Gulf Prod. Co.'s No. 2 Gubbels, Samuel Kennedy Sur. (location to come) ..... Drlg. shale and lime 1,938 ft.

Gulf Prod. and Humble O. & R. Co.'s No. 4-A F. I. Booth, 300 ft. S and W, SW cor. of Gubbels 100-ac. tr., Blk. 4, Samuel Kennedy Sur. ..... Comp. flowing 87 bbls. per hour. ¾-in. choke, 5,265 ft.

Gulf Prod. Co. and Humble O. & R. Co.'s No. 5-A F. I. Booth, 400 ft. E and 300 ft. S of SW cor. of Gubbels 100-ac. tr., Blk. 4, Samuel Kennedy Sur. ..... Drlg. sand and shale 5,026 ft.

Gulf Prod. Co. and Humble Oil & Ref. Co.'s No. 3 T. R. Booth, Samuel Kennedy Sur., 2,991 ft. from W line and 487 ft. from E line of E half of tract (452 ac.)... Coring sandy shale 5,204 ft

Gulf Prod. Co. and Humble O. & R. Co.'s No. 4 Meyers, John Rabb Sur., 250 ft. E of No. 3 ..... Drlg. sand and shale 5,268 ft.

Gulf Prod. Co. and Humble Oil & Ref. Co.'s No. 5 Meyers, J. Rabb Sur., 1,000 ft. W and 250 ft. N of SE cor. of Meyers 188-acre tract ..... Derrick.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 4 T. R. Booth, Samuel Kennedy Sur. (location to come) ..... Derrick.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 6-A F. I. Booth, Samuel Kennedy Sur. ..... Spudded.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 7-A F. I. Booth, Samuel Kennedy Sur. ..... Derrick.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 3 Davis, Robt. Peebles Sur., 2,985 ft. from W line and 350 ft. from N line ..... Drlg. shale and lime 5,623 ft.

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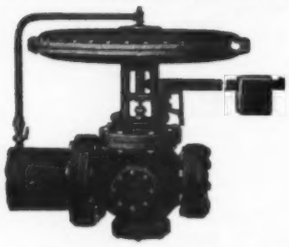

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10-13-32

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 5 George, John Rabb Sur., 1,000 ft. E of No. 4 ..... Drlg. sandy lime 4,190 ft.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 2-B George, John Rabb Sur., 1,000 ft. from W line and 330 ft. from N line of "B" lease ..... Setting 7-in. (O.D.) screen 5,275 ft.; comp. flowing 190 bbls. daily.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 3-A George, J. Rabb Sur., 1,000 ft. from W line and 350 ft. from S line of tract ..... Derrick.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 4 Lockwood-Second hole, John Rabb Sur., 250 ft. E of No. 4 Lockwood-First hole ..... Comp. flowing 1,500 bbls. daily, 5,205 ft.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 5 Lockwood, John Rabb Sur., 300 ft. from N line and 1,000 ft. from W line of 380-ac. tract ..... Spudded.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 8-A Lockwood & Sharp, J. Rabb Sur., 1,000 ft. W, 300 ft. S NE cor. of 349.3-ac. tract ..... Dry and abnd. 5,630 ft.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 9-A Lockwood & Sharp, J. Rabb Sur., due S offset Gulf and Humble's No. 4 Meyers ..... Rig.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 10-A Lockwood & Sharp, J. Rabb Sur. ..... Drlg. sand and boulders 1,358 ft.

Humble O. & R. Co. and Gulf Prod. Co.'s No. 4-B Lockwood & Sharp, J. Rabb Sur., 1,242 ft. from W line and 526 ft. from S line of tr. ..... Comp. flowing 54 bbls. per hour, 5/8-in. choke, 600 lbs. on tubing and 750 lbs. on casing.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 5-B Lockwood & Sharp, John Rabb Sur., 800 ft. W of No. 4 ..... Rig.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 6-B Lockwood & Sharp, John Rabb Sur., 800 ft. E of No. 4 ..... Derrick.

Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 1 R. A. and O. H. Wolters, Robt. Peebles Sur., 325 ft. S and 500 ft. W of NE cor. of 1,000-ac. tract ..... Derrick.

Humble Oil & Ref. Co.'s No. 1 Gubbels, Samuel Kennedy Sur., 750 ft. N and 775 ft. W of SE cor. of Mrs. Mary Gubbels 90.6 acres ..... Derrick.

The Texas Company's No. 2 Wolters, Samuel Kennedy Sur., 350 ft. out of SE cor. of 106-ac. lease ..... Coring sand showing oil 5,228 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 31 Cade, N. Fitzsimmons Sur., midway between and in line with Nos. 21 and 29 Cade ..... Sand showing oil 5,456 ft.; cmtd 7-in. csg. 5,456 ft.

Yount Lee Oil Co.'s No. 2 Broussard & Orme, Martin Duman Sur., 300 ft. SE of No. 1 ..... Sticky shale 5,983 ft.

Yount Lee Oil Co.'s No. 12 Smith, Martin Dunman Sur., 330 ft. W of No. 11 and 100 ft. N of No. 2 ..... Comp. flowing 1,400 bbls. daily ½-in. choke; sand 5,504 ft.

Yount Lee Oil Co.'s No. 32 Cade, N. Fitzsimmons Sur., 600 ft. due S of No. 30 ..... Drlg. 620 ft.

Yount Lee Oil Co.'s No. 2 M. M. Spencer, Martin Dunman Sur., center of tract in line with No. 11 Smith and No. 2 Nellie League ..... Drill stem stuck 5,723 ft.; milled out 4,633 ft.; drlg. sidetracked hole 5,270 ft.

MANVEL—BRAZORIA COUNTY

The Texas Company's No. 2 Ewing, 1,220 ft. southwesterly and 200 ft. northwesterly at right angles out of E cor. of Blk. E of Suburban Gardens Subd., Harvey N. Little Sur. ..... Drlg. shale, lime and boulders 2,232 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 89 Jordit ..... Drlg. rock 251 ft.

Rio Bravo Co.'s No. 400 "B" ..... Spudded.

SOUR LAKE—HARDIN COUNTY

Houston Prod. Co.'s No. 1 Merchant, Stephen Jackson Sur., 90 ft. from E line and 1,226 ft. from S line of lease ..... Rig.

Jackson Mineral Oil Co.'s No. 1 Lula Hebert, 50 ft. from N line and 72 ft. from E line of 2-acre tract, Lot 3, Stephen Jackson Sur. ..... Cap rock 2,885-92 ft.; abnd.

M. M. Miller's No. 1 Liberle Oil Co., Stephen Jackson Sur., 1,380 ft. NW of Houston Prod. Co.'s No. 1 Merchant ..... Rigging.

HUMBLE—HARRIS COUNTY

Sun Oil Co.'s No. 28 Bender, W. B. Adams Sur., 350 ft. W of No. 27 ..... Standing 370 ft.

Sun Oil Co.'s No. 59 River, R. Dunman Sur., 74 ft. from E line and 1,441 ft. from S line of block ..... No report.

Sun Oil Co.'s No. 62 River, Robert Dunman Sur., 100 ft. due E of J. D. Clay's No. 3 Bender ..... Sand and shale 1,178 ft.

J. O. Williams' No. 1 Stockdick, James Strong Sur., 100 ft. out of SE cor. of 22-acre lease ..... Drlg. 630 ft.

MYKAWA—HARRIS COUNTY

Crown-Framer Oil Co.'s No. 3 Minnetex, 100 ft. from S line and 100 ft. from E line of W half of Block 251, Wm. Lovett Sur. ..... Drlg. sandy shale and lime 3,636 ft.

Hamill & Smith's No. 1 Ward, 50 ft. out of SE cor. of Ward 10-ac. tract, Blk. 186, Wm. Lovett Sur. ..... Drlg. hard sand and pyrites 4,412

PIERCE JUNCTION—HARRIS COUNTY

Gulf Production Co.'s No. 35 Taylor, Hamilton Sur. No. 52, 50 ft. S of No. 1 ..... T.D. 4,650 ft.; sidetracked 3,720-3,858 ft.; set 1 jt. screen; rig up to pump; standing.

Rio Bravo Oil Co.'s No. 12 fee, J. Kopman Sur., 350 ft. from N line and 150 ft. from W line of tract ..... Drlg. hard rock and shale.

Rio Bravo Oil Co.'s No. 25-A Settegast, 625 ft. W and 525 ft. N of SE cor. "A" lease, Jas. Kopman Sur. No. 44 ..... Drlg. sand rock 3,862 ft.

Rio Bravo Oil Co.'s No. 26-A Settegast, J. Kopman Sur., 1,210 ft. from N line and 750 ft. from E line of "A" lease ..... Location.

Rock Drlg. Co.'s No. 1 Hooks, Jas. Hamilton Sur. No. 52, 160 ft. S and 60 ft. E of Humble's No. 1 Hooks ..... T.D. 4,265 ft.; drill stem stuck

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 6 Burrell, Wm. Smith Sur., 1,610 ft. N and 300 ft. E of SW cor. of 232-acre tract ..... Drlg. hard sand 3,625 ft.

CLAY CREEK—WASHINGTON COUNTY

Clay Creek Oil Co.'s No. 1 Bimage, C of E half J. P. Perry Sur., 200 ft. from W line and 1,300 ft. from S line of 242-acre tract ..... No report.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 7 Davis (D.D.), David L. Kokernut Sur. ..... Rig up to deepen 6,302 ft.

Cranfill & Reynolds' No. 5 Esperson (W.O.), M. Duncan Sur., 100 ft. N line and 300 ft. E line ..... Drlg. sand and shale 6,735 ft.

Cranfill-Reynolds Co.'s No. 9 Moore's Bluff, M. Duncan Sur., 500 ft. S of N line of Moore's Bluff tract in line with No. 4 Davis and No. 6 Moore's Bluff ..... Location.

Cranfill-Reynolds Co.'s No. 10 Moore's Bluff, M. Duncan Sur., 1,500 ft. from E line and 2,100 ft. from N line of 632-ac. tract ..... Drlg. sandy shale 3,236 ft.

HULL—LIBERTY COUNTY

Aberoil Co., Inc.'s No. 1 fee, Jesse DeVore Sur., 700 ft. from E line and 64 ft. from N line ..... Shut down 42 ft.

Carpenter & Parr's No. 1 Antilley, Jesse DeVore Sur., 100 ft. out of NE cor. of Antilley 20-acre tract ..... No report.

Eclipse Oil Co.'s No. 1 Knox-Nelson-Layton, Jesse DeVore Sur., 30 ft. from N line and midway E and W of ½-acre tract ..... Derrick.

Empire G. & F. Co.'s No. 34 Barngrover, Jesse DeVore Sur., 75 ft. out of SW cor. of lease ..... Sand 4,364 ft.; cmtd. 9⅝-in. csg. 4,305 ft.

Fondren & Snowden's No. 1 Humble fee, Jesse DeVore Sur., 250 ft. from E line and 50 ft. from S line of Humble Oil & Ref. Co.'s Hooks-Carr fee 6 acres ..... Drlg. 2,012 ft.

Gulf Prod. Co.'s No. 81 Dolbear (W.O.), 1,560 ft. from N line and 2,440 ft. from W line ..... No report.

Hannah Oil Co.'s No. 1 Hannah, Jesse DeVore Sur., 100 ft. W of The Texas Co.'s No. 1 Hannah ..... No report.

Houston Prod. Co.'s No. 1 Baldwin, Jesse DeVore Sur., 222 ft. from S line and 50 ft. from E line of 5-acre tract ..... Sand 5,015 ft.

Republic Prod. Co.'s No. 19 Dolbear (W.O.), Jesse DeVore Sur. ..... Drlg. 2,604 ft.

Republic Prod. Co.'s No. 141 Dolbear (W.O.), Jesse DeVore Sur. ..... Pulling screen 2,685 ft.

NORTH DAYTON—LIBERTY COUNTY

V. H. Borsodi's No. 2 Gulf fee (W.O.), H.&T.C. Sur., 600 ft. from N line and 82 ft. from E line of tract.. No report.

SOUTH LIBERTY—LIBERTY COUNTY

Mecom Oil Co.'s No. 1 Barrett, M. G. White Sur., 365 ft. from S line and 155 ft. from E line of lease ..... Rig.

MARKHAM—MATAGORDA COUNTY

Arcade Oil Corp.'s No. 4 Meyers, 250 ft. from S line and 125 ft. from E line of SW, Blk. 1, William Hadden Sur. ..... Abnd. in salt 3,889 ft.

CONROE—MONTGOMERY COUNTY

Gulf Coast Drlg. & Prod. Co.'s No. 1 Keystone Mills, 300 ft. out of NE cor. of A. S. James (T.&N.O. No. 4) Sur. ..... Sand and shale showing oil and gas 4,985-5,009 ft.; cmtd. 7-in. csg.

Gulf Coast Drlg. & Prod. Co.'s No. 2-B South Texas Dev. Co., Theo. Slade Sur., 466 ft. out of SW cor. of 40-acre lease ..... Oil sand 5,145 ft.; cmtd. 7-in. csg. 5,113 ft.

W. B. Hamilton et al's No. 1 Moorehead, J. McHorse Sur., 466 ft. from S line and 466 ft. from W line of Hill & Hill Moorehead 40-acre tract ..... Rig standing.

Hooper-Rutherford Oil Co.'s No. 2 Hooper, I.&G.N. Sur., Abst. 649, 708 ft. S of No. 1 in center of tract E and W ..... Rig.

Hooper-Rutherford Oil Co.'s No. 3 Hooper, I.&G.N. Sur., Abst. 649, 782 ft. S of No. 2 in center of tract E and W ..... Location.

Houston Oil Co. and Heep Oil Co.'s No. 1 Dobbins, Ransom House Sur., 466 ft. east of W line in center north and south of 100-ac. tract ..... Coring sand showing oil and gas 5,053 ft.

Humble Oil & Ref. Co.'s No. 2 Dobbins, Ransom House Sur., 1,400 ft. northeasterly along SE line of lease from SW cor. and 466 ft. northwesterly at right angles ..... Drlg. shale and lime 1,793 ft.

Humble Oil & Ref. Co.'s No. 1 Madeley, Ransom House Sur., 466 ft. northwesterly at right angles from S line of tract and 518 ft. easterly from NW cor. of Dobbins 329.6 acres ..... Drlg. shale 3,402 ft.

Humble Oil & Ref. Co.'s No. 2 Madeley, Ransom House Sur., 466 ft. southwesterly along southernmost SE line from SE cor. of tract and 466 ft. northwesterly at right angles ..... Derrick.

Humble Oil & Ref. Co.'s No. 1 South Texas Dev. Co. (D.D.), 468 ft. westerly along N line of Theo. Slade Sur. from SW cor. A. McCown Sur., thence 750 ft. southerly at right angles ..... Rig up to deepen 4,991 ft.

Humble Oil & Ref. Co.'s No. 2 South Texas Dev. Co. (W.O.), Theo Slade Sur. ..... No report.

Humble Oil & Ref. Co.'s No. 9 South Texas Dev. Co., Theo. Slade Sur., 330 ft. E and 328 ft. N of SE cor. Gulf Coast Drlg. & Prod. Co.'s 60 ac. ..... Comp. flowing 900 bbls. daily. ⅝-in. choke, 5,161 ft.

Humble O. & R. Co.'s No. 10 South Texas Dev. Co., 1,125 ft. from S line and 660 ft. from E line of Sur... Sand and shale showing oil 5,164 ft.; setting screen.

Humble Oil & Ref. Co.'s No. 11 South Texas Dev. Co., Theo. Slade Sur., 466 ft. S and 466 ft. E of SW cor. of 40-acre "B" lease ..... Drlg. shale 4,831 ft.

Humble Oil & Ref. Co.'s No. 12 South Texas Dev. Co., 466 ft. S and 4,750 ft. E of SW cor. of Theo. Slade Sur. ..... Drlg. sandy shale 5,076 ft.

Humble Oil & Ref. Co.'s No. 13 South Texas Dev. Co., 466 ft. S and 466 ft. W of SE cor. of A. M. Folks Sur. ..... Drlg. shale and lime 3,305 ft.

Humble Oil & Ref. Co.'s No. 14 South Texas Dev. Co., 1,100 ft. N along NE line of T. C. Howell Sur. and thence 466 ft. westward at right angles ..... Spudded.

Humble Oil & Ref. Co.'s No. 15 South Texas Dev. Co., 1,850 ft. northward along E line of Theo. Slade Sur. from SE cor. and thence 600 ft. westward at right angles in Lot 2 ..... Drlg. shale 1,278 ft.

Humble Oil & Ref. Co.'s No. 16 South Texas Dev. Co., Theo. Slade Sur., 657 ft. S of No. 10 and 677 ft. from E line of survey ..... Drlg. shale and lime 1,035 ft.

Humble Oil & Ref. Co.'s No. 17 South Texas Dev. Co., 466 ft. W of E line of Gulf Coast Drlg. & Dev. Co.'s "B" lease and 297 ft. S of N line of Theo. Slade Sur.. Drlg. shale and sand 1,196 ft.

Humble Oil & Ref. Co.'s No. 18 South Texas Dev. Co., 495 ft. E and 165 ft. N of NE cor. of Blk. 42, Alex McCown Sur. ..... Drlg. shale 934 ft.

Humble Oil & Ref. Co.'s No. 19 South Texas Dev. Co., 30 ft. N and 682 ft. W of SE cor. of T. C. Howell Sur. Rigging.

Humble Oil & Ref Co.'s No. 20 South Texas Dev. Co., 765 ft. S and 671 ft. W of NE cor. of Theo. Slade Sur. ..... Derrick.

Humble Oil & Ref. Co.'s No. 21 South Texas Dev. Co., T. C. Howell Sur., 933 ft. NE of No. 8 and 709.8 ft. NW of survey line ..... Derrick.

Humble Oil & Ref. Co.'s No. 21 South Texas Dev. Co., Theo Slade Sur., 333 ft. SW of SE cor. of Alex McCown Sur., thence 500 ft. S at right angles ..... Derrick.

Humble Oil & Ref. Co.'s No. 1 Alexander, NE cor. of J. McHorse Sur. ..... Derrick.

Humble O. & R. Co.'s No. 3 Cartwright, John Davis Sur., 289 ft. from N line and 395 ft. from W line of Freeman 36 acres ..... Sand 5,130 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 4 Cartwright, John Davis Sur., 660 ft. out of NW cor. of tract ..... Coring sand 5,170 ft.

Humble Oil & Ref. Co.'s No. 5 Cartwright, 694 ft. W and 370 ft. N of NE cor. of J. D. Watson Sur. in John Davis Sur. ..... Drlg. lime 2,896 ft.

Humble Oil & Ref. Co.'s No. 6-A Cartwright, John Davis Sur., 671 ft. from W line and 376 ft. from S line of lease ..... Derrick.

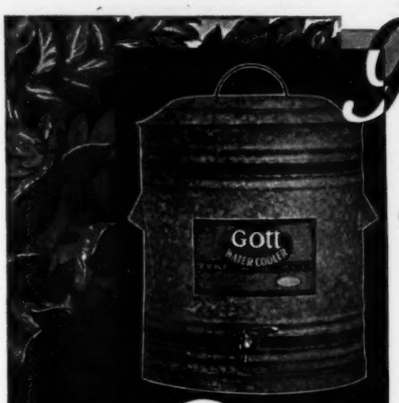
Humble Oil & Ref. Co.'s No. 1 Gholson & Cartwright, 512 ft. N and 300 ft. E of SW cor. of E half of John Davis Sur. ..... Drlg. sand 5,003 ft.

Humble Oil & Ref. Co.'s No. 2 Plaeffl'n, W. N. Real Sur. 671 ft. from W line and 326 ft. from N line of 110-acre tract ..... Rig.

Lilly and Red Moon Oil Co.'s No. 1 Stella McDonald, John Davis Sur., 241½ ft. from E line, 202.8 ft. from S line of 5-ac. tract ..... S.D. 916 ft.

Albert Plummer's No. 1 South Texas Dev. Co., E half of Blk. 43, Alex McCown Sur. ..... Cmtd. surface csg. 1,096 ft.

Rowe & Flowers' No. 1 Alexander, 330 ft. out of SE cor. Lot 20 in the NW A. McCown Sur. ..... T.D. 5,254 ft.; plugged to 5,096 ft. set 30 ft. screen; tested S.W. and some oil; standing.



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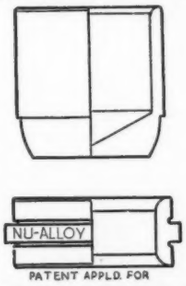

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Showers & Moncrief's No. 1 R. H. Dunn, M. W. Real Sur., C of N 20 acres of Moncrief 30 acres ..... Blew out 1,250 ft.; abnd. hole; rig and derrick skidded 700 ft. south.
Southland Oil Co.'s No. 1 Cummings, Wilson Strickland Sur., 466 ft. out of NE cor. of 104-acre tract ..... Drlg. sand 1,078 ft.
Steinberger et al's No. 1 Hooper, J. D. Watson Sur., 466 ft. from N line of 10-acre tract in C E and W ... Drlg. plug 5,044 ft.
The Texas Company's No. 1 Moody, 1,400 ft. easterly and 466 ft. southerly out of NW cor. of Moody 494-acre lease, Ranson House Sur. ..... Drlg. gumbo and lime 3,274 ft.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 2 Polk-Kuhn-Glass, 350 ft. E and 100 ft. S of SW cor. of Marshall Beauchamp Sur. ..... Sand and shale showing oil 3,473-83 ft.; cmtd. 9⅝-in. csg. 3,458 ft.

REFUGIO—REFUGIO COUNTY

Hewitt & Dougherty's No. 1 M. F. Lambert, Wm. Hews and L. Brown Sur., 4,350 ft. NE along NW line from SW cor. of United Prod. Corp.'s M. F. Lambert lease and thence 990 ft. SE at right angles ..... Coring sand and shale 6,300 ft.
T. P. Morgan's No. 2 M. F. Lambert, 993 ft. from W line and 160 ft. from S line of lease in NE cor. of town tract ..... Dry and abnd. 5,949 ft.

SOUTH LOUISIANA FIELDS

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 11 Housierre-Latrielle, 1,010 ft. N and 5,050 ft. S of SW cor. of Sec. 47-9s-2w ..... Drlg. 4,812 ft.

SORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 22 United Land Co., 5,760 ft. N and 1,360 ft. W of SE cor., Sec. 15-10s-4e ..... Drlg. 4,502 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Magnolia Pet. Co.'s No. 2 Waite, 330 ft. out of NE cor. SE, Sec. 12-9s-7w ..... Sand showing oil 6,900 ft.; cmtd. 4½-in. csg.
Shell Pet. Corp.'s No. 2 Fontenot, 225 ft. E and 325 ft. N of SW cor. of Sec. 7-9s-6w ..... Drlg. hard sandy lime 6,054 ft.

EDGERLY—CALCASIEU PARISH

The Texas Company's No. 1 Miller Estate, 150 ft. E and 150 ft. S of NW cor. of NE of Sec. 27-9s-11w ..... No report.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 770 fee, 292 ft. S, 1,343 ft. W of center, Sec. 29-9s-10w ..... Drlg shale 3,012 ft.
Union Sulphur Co.'s No. 772 fee, 145 ft. S, 882 ft. W of center, Sec. 29-9s-10w ..... Salt 3,968-5,009 ft.
Union Sulphur Co.'s No. 774 fee, 226 ft. W, 114 ft. S of center of Sec. 28-9s-10w ..... No report.

VINTON—CALCASIEU PARISH

Gulf Ref. Co.'s No. 6 Gray, Sec. 33-10s-12w, 160 ft. W of No. 3 ..... Heaving shale 3,342 ft.; shut down.
Marrs McLean's No. 14 Gray, Sec. 33-10s-12w, 88 ft. W and 30 ft. S of No. 4 ..... Set 56 ft. of 4½-in. screen 2,755 ft.; tested S.W.; deepened to 2,764 ft.; reset screen; no report.
Vinton Pet. Co.'s No. 5 Matilda Gray (D.D.), 456 ft. W, 382 ft. N, SE cor. SW NE, Sec. 33-10s-12w ..... Tested S.W. 3,684 ft.; pulling screen to deepen.
Wilson-Broach's No. 2 Wilson (W.O.), 230 ft. N and 126 ft. E of SW cor. SE NE of Sec. 33-10s-12w ..... Sand showing oil 3,440 ft.; cmtd. 4½-in. liner 3,430 ft.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 3 Alliance Trust Co., 699 ft. from N line and 1,460 ft. from W line of Sec. 34-11s-1w ..... Drlg. sticky shale 904 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 37 Watkins, 776 ft. N and 2,267 ft. W of SE cor. of Sec. 13-12s-10w ..... Lime rock 3,200 ft.
Wilfred Lahaye's No. 1 Olevia, Sec. 36-12s-10w, in 2-acre tract ..... Spudded and shut down.
Mills & Sless Oil Co.'s No. 1 Sun-Vincent, 300 ft. S and 75 ft. E of NW cor. NE of Sec. 30-12s-10w, in Sun Oil Co.'s 40-acre lease ..... Salt 2,230-2,532 ft.; abnd.
Lackawanna Oil Co.'s No. 1 Ellender, 320 ft. S and 150 ft. E of NW cor. of SE SE of Sec. 21-12s-10w ..... Derrick.
Union Sulphur Co.'s No. 1 Gulf land (Pure Oil Co. lease), 1,958 ft. N, 400 ft. W of SE cor., Sec. 11-12s-10w ..... T.D. 8,324 ft.; sidetracked to 7,423 ft.; drill stem stuck; abnd.
Union Sulphur Co.'s No. 2 Gulf Land-Pure lease, 1,958 ft. N and 200 ft. W of SE cor. of Sec. 11-12s-10w ... Rigging.
Union Sulphur Co.'s No. 3 Gulf Land-Humble lease, 711 ft. N and 430 ft. W, SE cor., Sec. 11-12s-10w ..... Drlg. shale 5,975 ft.
Yount Lee Oil Co.'s No. 11 School land, 2,810 ft. W and 1,608 ft. N, SE cor., Sec. 15-12s-10w ..... Drlg. 5,420 ft.

CHOCTAW—IBERVILLE PARISH

Standard Oil Co.'s No. 3 Myrtle Grove, Sec. 52-9s-11e, 400 ft. S and 50 ft. W of No. 1 ..... Drlg. 1,600 ft.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 6 Wilbert, Sec. 9-11s-12e, 200 ft. out from No. 5 ..... Drlg. sandy shale and lime 3,449 ft.

LEESVILLE—LA FOURCHE PARISH

The Texas Company's No. 5 L.L.&E., Sec. 26-21s-22e .... Spudded.

PORT BARRE—ST. LANDRY PARISH

Port Barre Oil Co.'s No. 1 Sibille (W.O.), Sec. 20-6n-5e, 600 ft. S and 134 ft. E. NW cor. of 30-ac. tr. .... Standing 3,494 ft.

STARKS—CALCASIEU PARISH

Emerson & Stark's No. 2 Industrial, 400 ft. S of No. 1, in SE cor. NE NW, Sec. 30-9s-12w ..... Drill stem stuck 4,136 ft.
Gulf Ref. Co.'s No. 31 Lutcher-Moore, Sec. 19-9s-12w, 500 ft. E of No. 15 ..... Gumbo 2,310 ft.; trying to sidetrack old hole.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 11 Yount Lee, Sec. 12-13s-8w, 800 ft. S 66 deg. 42 min. from No. 9 ..... Drlg. sand and gravel 481 ft.

TEXAS

MISCELLANEOUS WILDCATS

AUSTIN COUNTY

Great Southern Oil Co.'s No. 1 Schevojsa, 329 ft. N, 78° E of N cor. B. Dottery Sur. ..... S.D. 2,848 ft.

BRAZORIA COUNTY

Danciger O. & R. Co.'s No. 1 W. C. Hunt, Pledger, 5,220 ft. from the N line and 6,500 ft. from E line of W. Colrson Sur. ..... Drlg. shale 5,067 ft.
John Deering's No. 1 C. W. Chapman, 294 ft. from S line and 104 ft. from E line of Lot 2, Andrew Robinson Sur. ..... Shut down 5,063 ft.
Gulf Prod. Co.'s No. 1-B H. P. Lockwood, Wiley Martin Sur. No. 9, 3,024 varas S, 45° W along SE line of Lockwood 536-acre tract from E cor., thence 241 varas NW at right angles from said line ..... Rigging.
A. D. Parsons et al's No. 1 Hughes, 1,500 varas, NE from W cor. along NW line of A. L. D. Lewis Sur., and 200 varas SE at right angles in Hughes 320-acre tract ..... Spudded.
Shell Pet. Corp.'s No. 5 Blakely-Winston, Danbury, 1,410 ft. N 63° and 1,200 ft. N 27° W of SW cor. of H.T.&B. Sur. No. 14 ..... Drlg. brownish red shale 3,701 ft.
Tri-fin Oil Co.'s No. 1 Moers, 1,635 ft. southwest of Chocolate Bayou and 692 ft. SE of NW line of F. Moore Sur. ..... Drlg. gumbo 2,105 ft.

BURLESON COUNTY

Ball & Knob's No. 1 Polansky, M. B. Lawrence Sur., 359 ft. from E line and 469 ft. from N line of 158-ac. tr. ..... No report.
S. M. Bracey et al's No. 1 Bracey, J. Lastly Sur., 880 ft. from E cor. of P. Taylor 110 acres, SE along NE line of J. G. Houston 160 acres, thence 180 ft. at right angles in 3-acre tract ..... No report.
Sampson Oil & Gas Co.'s No. 3 Duckworth & Gilley, P. Singleton Sur., 50 ft. SE of No. 1 ..... Rig.
J. E. Stubblefield et al's No. 1 Mitchell, A. T. Woolridge Sur., 81 ft. SW and 4,340 ft. SE of S cor. of Joseph Henson Sur. ..... Gumbo 600 ft.; standing.

COLORADO COUNTY

Bunte and Shell Pet. Corp.'s No. 1 Rudolph Matuska, Joshua Kenneke Sur., 700 ft. S of most northerly NW cor. in C E and W of 130-acre tract ..... Fishing lost bit; T.D. 3,508 ft. in lime.
Smith, Adair et al's No. 1 Barnett, 230 ft. from W line and 330 ft. from S line of Blk. 26, Q. K. Winn Sur. ... Black shale 4,348 ft.; standing.

FORT BEND COUNTY

Lowrie & Young's No. 1 Jackson Brown, Pilant Lake, Wm. Barrett & Abner Harris Sur., 150 ft. out of SW cor. of Brown 1,000-acre tract ..... Moving in rig.
Lynch et al's No. 1 Kneitz, 690 ft. from NW line and 350 ft. from SW line of Sec. 43, H.&T.C. Sur. ..... Drlg. shale 676 ft.
Magnolia Pet. Co.'s No. 1 Hampil, H. Christman Sur., 1,242 ft. N and 285 ft. W from SW cor. of J. W. Slavin 28 acres ..... Drlg. sand 1,889 ft.
Naylor & DeCosta's No. 1 Naylor, 6,350 ft. N, 55 deg. E from SW cor. 653-acre tract in Christman Sur. ..... Drlg. shale 6,050 ft.
North Star Pet. Co.'s No. 1 Guyler, Andrew Roberts Sur., 330 ft. out of SW cor. of 100-acre tract ..... Shut down 4,005 ft.
O'Hara et al's No. 1 Mayes, N. F. Roberts Sur., 300 ft. from N line and 500 ft. from E line of M. K. Mayes' 114 acres ..... Abnd. 775 ft. (corrected depth).
Paul & Gerke's No 1 Krenek, Gale Borden Sur., 150 ft. out of NW cor. of tract ..... Derrick.

GALVESTON COUNTY

Humble Oil & Ref. Co.'s No. 1 Rosenkranz, Green's Bayou, center N half of Lot 10, Sarah White Sur. ... Drlg. hard sand 4,390 ft.

GRIMES COUNTY

Barnett et al's No. 1 Dodd, Timothy Jones Sur. ..... Shut down 2,689 ft.
W. J. Brightwell's No. 1 Combs, Samuel Beauman Sur., 350 ft. from S line and 622 ft. E of extreme W line of 276-acre tract ..... Shut down 3,125 ft.
Petroleum Southwestern Corp.'s No. 1 Greer Bros., Pat B. O'Connor Sur., 450 ft. S and 200 ft. E of SW cor. of 63-acre tract ..... Derrick.

HARDIN COUNTY

Gulf Prod. Co.'s No. 1 Kirby, Ariola, 330 ft. out of SE cor. of 100-ac. tract, Ariola Sur. ..... Drlg. gumbo 3,188 ft.
Houston Oil Co.'s No. 1-X Ariola fee, 3,000 ft. from N line and 5,610 ft. from W line of Ariola Sur. ..... Coring sand 4,075 ft.
Houston Oil Co.'s No. 1-Y Ariola fee, 5,610 ft. from W line and 5,610 ft. from N line of Ariola Sur. ..... Derrick.
Houston Oil Co.'s No. 1-Z Ariola fee, 3,000 ft. from W line and 5,610 ft. from N line of Ariola Sur. ..... Drlg. shale 1,525 ft.
Chas. Paggi's No. 1 Hooks, 200 ft. out of NW cor. of Wm. Slade Sur. ..... Drlg. water sand 1,506 ft.
Joe E. Proctor's No. 1 Russell & Teagle, 3,650 ft. E and 2,777 ft. N of NW cor. of Wm. W. Young Sur. ..... Drlg. shale 2,658 ft.
Republic Prod. Co.'s No. 2 Ariola fee, Ariola Sur., 660 ft. due E of Gulf's No. 1-A Kirby ..... Spudded.
Republic Prod. Co.'s No. 3 Ariola fee, Ariola Sur., 660 ft. due S of Gulf's No. 1-A Kirby ..... Derrick.
Republic Prod. Co.'s No. 1 Ben Andrews fee, 1,140 ft. W of Neches River and 345 ft. N at right angles in Van Meter Sur. ..... Cmtd. 12-in. csg. 1,300 ft.

HARRIS COUNTY

Bayou Oil Co.'s No. 1 Hall, 350 ft. from N line and 970 ft. from E line of Wm. Hedge Sur. ..... Dry and abnd. 5,008 ft.
T. V. Buckholve & Sons' No. 1 Miller, Arthur McCormick Sur. ..... Drlg. gumbo 1,135 ft.
Cherry & Pritchard's No. 1 Dr. Griffith, S. Bell Sur., 582 ft. from E line and 60 ft. from N line of 250-acre tract ..... T.D. 756 ft.; cmtd. 10-in. csg. 650 ft.
John Deering's No. 1 Warren, Hockley T. Snell Sur., 100 ft. due south of The Texas Co.'s No. 3 Warren .. S.D. 2,411 ft.
Koinm Prod. Co.'s No. 1 Burt & Griffith, 2,100 ft. W of E line of A. R. Bowman Sur. and 2,600 ft. S of Spring Creek ..... No report.
H. D. Morse et al's No. 1 Schlveinle, Wm. White Sur., 900 ft. S 80° W of NW cor. of Lienberger 20-ac. tract in Blk. 1 ..... Drlg. shale 3,904 ft.
John R. Turnbull's No. 1 Laureman, 569 varas E and 315 varas S of NW cor. of W. B. Bissonett Sur. ..... Shale 5,372 ft.

JASPER COUNTY

Gulf Prod. Co.'s No. 1 Miller Vidor, 2,893 ft. S and 112 ft. E of NW cor. of Sarah Gray Sur. ..... Spudded.
Houston Oil Co.'s No. 1 Richardson fee, 2,000 ft. S and 3,003 ft. W of NE cor. of Ben Richardson Sur. ..... Drlg. gumbo 739 ft.
P. Michael et al's No. 1 Eck, G.C.&S.F. Sur., 502 ft. from N line and 497 ft from E line of tr. ..... Drlg. shale 1,706 ft.
Smitherman, Neilson & Noble's No. 1 Cameron, SE cor. of Cameron Lbr. Co. tract, Wm. Jones Sur. ..... Location.

JEFFERSON COUNTY

Glam & Pipkin's No. 2 Broussard, John McGaffey Sur., 150 ft. due E of No. 1 ..... Shut down 1,855 ft.
Jack Schultz' No. 2 Todd, Cheek, 1,800 ft. S of No. 1 and 130 ft. E of W line of Wm. Carr Sur. ..... Cmtd. 9⅝-in. csg. 4,024 ft.

LIBERTY COUNTY

Leon Brisley's No. 1 J. M. Neal, Edward Tanner Sur., 1,800 ft. E, 1,300 ft. N of most westerly NW cor. of Margaret Evans Sur. ..... Drlg. shale and lime 3,466 ft.
Mayes et al's No. 1 Dunman, J. C. Martin Sur., 1,111 ft. from S line of survey and 2,360 ft. W of Trinity River ..... Rig.

MATAGORDA COUNTY

Danciger O. & R. Co.'s No. 1 Turner, 4,900 ft. from NE line and 3,800 ft. from SE line of M. Cummings Sur. ..... Surface clay 30 ft.; derrick down.
Dr. Griffith et al's No. 1 Baer, Big Hill, 5,000 ft. N, 3,000 ft. E from SW cor. of Seth Ingram Sur. ..... Standing 2,720 ft.
Rugeley et al's No. 1 Cleveland, E. Hall Sur., 450 ft. E of Cottonwood Creek and 200 ft. N of S line of 60-acre tract ..... Drlg. gumbo 1,015 ft.

MONTGOMERY COUNTY

Miller Prod. Co.'s No. 1 Foster Lbr. Co., M. B. Lawrence Sur., 2,640 ft. from N line and 300 ft. from E line of 412-acre tract ..... Shut down 4,020 ft.
Pevehouse Oil Co.'s No. 1 Sealey, Jas. Pevehouse Sur., 1,575 ft. N of N line of Horton & Woodson's 1,562-acre tract and 2,226 ft. E of W line of H.&W. 1,870-acre tract ..... Shut down 3,984 ft.
Rheubotham et al's No. 1 A. H. Salis, Wm. Barker Sur., 390 ft. from E line and 400 ft. from N line of W 26 acres of Salis tract ..... Spudded.
Sutton-Hawkins' No. 1 Foster, Hosea de la Garza Sur., 3,333 ft. N and 1,320 ft. E of NE cor. of W. J. Johnson 100-ac. tract ..... Drlg. shale 3,165 ft.

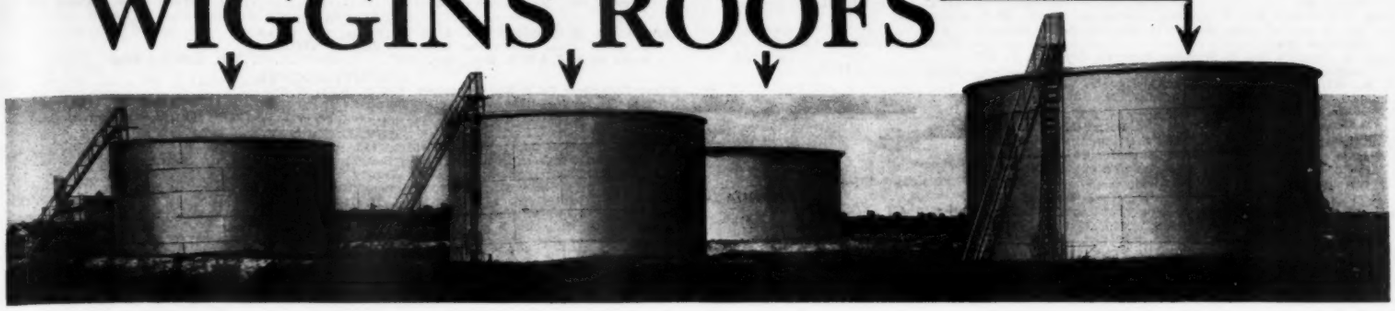
NEWTON COUNTY

L. A. James et al's No. 1 Price, T.&N.O. Sur., 1,000 ft. from W line and 500 ft. from N line of tract ..... Shut down 1,205 ft.
Sun Oil Co.'s No. 1 Peevey Moore Lbr. Co., 2,145 ft. from S line and 1,225 ft. from W line of F. Stoevar Sur. No. 4 ..... Drlg. shale 5,682 ft.

POLK COUNTY

Anderson et al's No. 1 Duke, Peter J. Manard Sur., 320 ft. out of NW cor. of 235-acre tract ..... Cmtd. 10-in. csg. 756 ft.; standing

WIGGINS ROOFS



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Fire tests by prominent oil companies led to the adoption of Wiggins Roofs in the early days of their introduction. Now their many years' record on hundreds of tanks all over the world is evidence of the effective protection which they afford.

Wiggins Roofs prevent fires by eliminating explosive mixtures of air and vapor—either inside or outside the tank. The Wiggins seal prevents a flash from reaching the oil.

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DALLAS	1241 Burt Bldg.	DETROIT	1514 Lafayette Bldg.	SAN FRANCISCO	1054 Rialto Bldg.
HOUSTON	2919 Main Street	CLEVELAND	2204 Midland Bldg.	SEATTLE	4323 Smith Tower
TULSA	1406 Philcade Bldg.	NEW YORK	3147 Hudson Terminal Bldg.	LOS ANGELES	1323 William Fox Bldg.
BIRMINGHAM	1536 Fiftieth St., N.	PHILADELPHIA	2615 "1616" Walnut St. Bldg.	HAVANA, CUBA	Apartado 2507
CHICAGO	2128 Old Colony Bldg.	BOSTON	1517 Consolidated Gas Bldg.	CABLE ADDRESS	Chibridge

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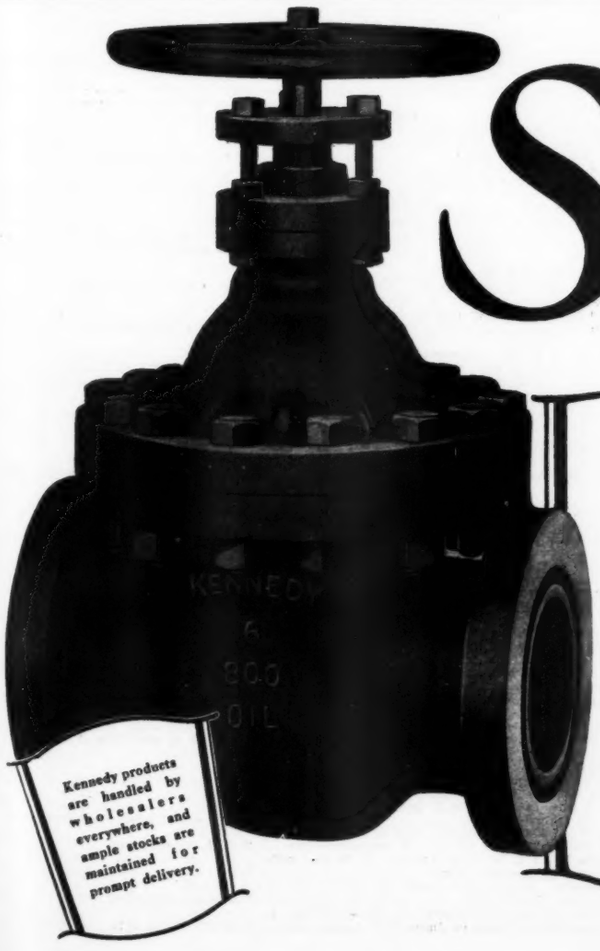

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KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

Cech & Stevens' No. 1 Ruth Lawrence, Castillian Sur., 300 ft. from W line and 700 ft. from S line of 54-acre tract ..... Drlg. shale 1,507 ft.
Dick Schwabb's No. 1 Carlton Davis, A. Viesca Sur., 350 ft. out of most northerly SE cor. A. E. Munson 101-acre tract ..... Drlg. sticky shale 4,114 ft.
Tony & Purdy's No. 1 Martha Roberts, Joaquin T. De Rumayor Sur. ..... Drlg. gumbo 980 ft.
G. A. Williams et al's No. 1 Carlton-Davis, 300 ft. E and N out of SW cor. of L&G.N. Sur. No. 52 in 55-ac. tr. ..... Drlg. sticky shale 4,017 ft.

REFUGIO COUNTY

Humble Oil & Ref. Co.'s No. 3 O'Connor, Florentine Rice Sur., 13,757 ft. from S line at right angles and 3,412 ft. from E line at right angles of 5,545-acre ranch ..... Drlg. sand 193 ft.

SAN JACINTO COUNTY

Geo. L. Pace and Ed. C. Lawson's No. 1 Delta Land & Lbr. Co., H.&T.C. Sur. No. 3, 2,640 ft. from E line and 1,940 ft. from S line of Sur. ..... Drlg. sandy shale 3,727 ft.
Weaver et al's No. 1 Delta Land & Timber Co., 1,400 ft. NE of SW line of James W. Robertson Sur., and 800 ft. at right angles ..... Derrick.

TYLER COUNTY

Allied Pet. Co.'s No. 3 Wilson, 1,500 varas from W line and 600 varas from N line of Mrs. E. Cheny Sur., Abst. 798 ..... T.D. 5,146 ft.; trying to pull 8-in drill pipe.
Republic Prod. Co. and Houston Oil Co.'s No. 1 fee, 8,384 ft. from W line and 484 ft. from N line of Adolph Sterne Sur. ..... Sand 4,698-4,708 ft.; drill stem test 4,675 ft.; est. 30,000,000 ft. dry gas, 750 lbs. pressure, ¾-in. choke; cmtd. 7-in. csg. 4,680 ft.

VICTORIA COUNTY

Houston Oil Co.'s No. 1-A McFaddin, 200 ft. from NE line, 240 ft. from SE line of I.R.R. Sur. No. 20 ... Heaving shale 6,480 ft.; abnd.
Houston Oil Co. and Magnolia Pet. Co.'s No. 1 Beck, I.R.R. Sur. No. 26, 1,000 ft. NE along NW line from most westerly west cor. of Lot D and 600 ft. SE at right angles ..... Derrick.
Humble Oil & Ref. Co.'s No. 1 Pete Rydolph, John Kemper Sur., 2,617 ft. from E line and 1,013 ft. from W line of lease ..... Drlg. sandy shale 6,225 ft.
Slick-Seeligson Corp.'s No. 2 McFaddin (D.D.), J. Varian Sur., 1,100 ft. NE of SW line and 635 ft. E of railroad ..... No report.
The Texas Company's No. 3 McFaddin (W.O.), S 15° W 6,200 ft., N 75° W 1,850 ft. from NE cor. John M. Rine Sur. ..... Drlg. sand and shale 6,947 ft.
Union Oil Co.'s No. 1 Keeran, 4,166 ft. SW along SE line of Gulf Prod. Co.'s 2,500-ac. lease from most easterly cor., thence 1,390 ft. SE at right angles in Martin DeLeon Sur. ..... Dry and abnd. 6,670 ft.
Union Oil Co.'s No. 2 Keeran, Martin DeLeon Sur., 500 ft. E of E line of Gulf lease and 1,900 ft. N of railroad ..... Derrick.

WALKER COUNTY

W. E. Brown's No. 1 Horshall, 150 ft. out of SE cor. of E. Miller Sur. ..... Shut down 3,600 ft.
Hart Oil Co.'s No. 1 Thompson Lbr. Co., Jose Ortega Sur., 1,265 ft. S. 1,976 ft. W of SW cor. of J. B. Gibson's 71-acre tract ..... Shut down 2,090 ft.

WALLER COUNTY

Bancho Oil Co. and Jim Oil Co.'s No. 1 Joe W. Harris, 3,000 ft. from E line and 5,000 ft. from N line of H.&T.C. Sur. in Harris 1,475-acre lease in Justo Liendo Sur. ..... Shut down 1,170 ft.
Birdwell et al's No. 1 Robertson, John Baker Sur., 1,625 ft. from S line and 450 ft. from W line of 64-acre tract ..... Derrick.

WASHINGTON COUNTY

M.O.&T. Corp.'s No. 1 Giddings, S. Young Sur., 200 ft. from S line and 150 ft. from W line of 698-acre tract ..... Shut down 65 ft.

WHARTON COUNTY

Gantt et al's No. 1 Laura Hahn, N. Manch Sur., 330 ft. out of NE cor. 142.17-ac. tract ..... Shut down 3,315 ft.
Smith & Daniels' No. 1 Mitchell, H.&T.C. Sur. No. 8, 330 from NE line of NE 80-acre tract in C of tract NW and SE ..... D.S. test 3,064-3,121 ft.; 200 lbs. dry gas, ¼-in. choke in 4 minutes; D.S. test 3,170-3,203 ft., 300 lbs. dry gas, ¼-in. choke, 4½ minutes; waiting orders.

SOUTH LOUISIANA

BEAUREGARD PARISH

DeRidder Dev. Co.'s No. 1 McMahon, 200 ft. W and 150 ft. S of NE cor. of NW of Sec. 33-2s-9w ..... Standing 1,286 ft.

CALCASIEU PARISH

Cannon & Hughes' No. 1 J. S. Reed, Sec. 18-10s-12w... Derrick.
I. R. Irvine et al's No. 1 A. D. Mimms, 741 ft. N and 741 ft. W of SE cor. SE NE, Sec. 20-9s-7w ..... Shut down 745 ft.

JEFFERSON DAVIS PARISH

S. D. Finly's No. 1 Clarphy Lognion, SW NW of Sec. 22-10n-4w ..... Derrick.

PLAQUEMINES PARISH

Lake Washington-Freeport Sulphur Co.'s No. 3 Cockrell-Moran, 5,100 ft. E and 1,000 ft. S of Washington Station, Sec. 14-20s-26e ..... Sulphur test.
Lake Washington-Freeport Sulphur Co.'s No. 4 Cockrell-Moran, 3,200 ft. S and 2,950 ft. E of Washington Station, Sec. 14-20s-26e ..... Oil sand 1,127 ft.; 10-in. csg. 1,123 ft.; comp. flowing 20 bbls. P.L. oil.
Lake Washington-Freeport Sulphur Co.'s No. 5 Cockrell-Moran, 5,200 ft. E and 850 ft. N of Washington Station, Sec. 14-20s ..... Sulphur test.
The Texas Co.'s No. 5 Garden Island Bay, 2,180 ft. W and 1,750 ft. S, NE cor., Sec. 107-23s-32e ..... Drlg. 980 ft.

TERREBONNE PARISH

The Texas Company's No. 6 State-Dog Lake, 3,230 ft. W and 908 ft. N of SE cor. of Sec. 31-21s-16e ..... Drlg. sand 2,400 ft.
The Texas Company's No. 7 State-Lake Pelto, 2,216 ft. N. 104 ft. W of SE cor., Sec. 8-23s-18e ..... Drlg. 1,705 ft.
The Texas Company's No. 17 State-Lake Barre, 1,476 ft. W and 626 ft. S of NW cor. of Sec. 20-21s-20e .... Salt 2,203-29 ft.
The Texas Company's No. 4 Lake Barre-L.L.&E., 2,803 ft. S and 2,675 ft. W of NW cor. of Sec. 30-21s-20e in Sec. 36-21s-19e ..... Derrick.

VERNON PARISH

Minerals Division Llano Co.'s No. 1 Llano Del Rio, 542 ft. E and 200 ft. S of NW cor. of NW of Sec. 34-2s-9w ..... No report.

WEST FELICIANA PARISH

Putnam Synd.'s No. 3 Como Plantation, Sec. 51-1s-14w Shut down 2,449 ft.

Wildcat Operations in Southwest Texas

(Continued from Page 70)

CALDWELL COUNTY

Cargill et al's No. 1 Dameron, 150 ft. from N and W lines of 73-5-ac. tract in Dillard Cooper Sur. ..... T.D. 1,100 ft.; standing.
E. D. Herne's No. 1 M. C. and P. W. Jeffrey 126-ac. tract, 150 ft. from N and E lines of tract in James George Sur. ..... Set surface pipe, waiting for wtr.

COMAL COUNTY

Caldwell & M. Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-acre tract in H.E.&W.T. Sur., Sec. 894 ..... T.D. 887 ft.; drlg.

DIMMITT COUNTY

Motes-Campbell Co.'s No. 1 Denton, 150 ft. from E line, 350 ft. from S line of Tracts 33 and 34 in Sec. 60 of Denton Colony Subd. ..... T.D. 400 ft.; waiting for csg.

DUVAL COUNTY

J. E. Anderson's No. 1 Wood-Welder, 115 ft. from W line, 400 ft. from N line of Sur. No. 71 ..... T.D. 600 ft.; drlg.
Buchanan & Terrell's No. 1 Duval County Ranch Co., 990 ft. to W line, 1,120 ft. to S line of Sur. No. 96... Moving in rig.
Delange & Prates' No. 1 Sevier, 1,845 ft. from N line, 2,945 ft. from W line of Sur. 213 ..... T.D. 3,436 ft.; drlg. sticky shale.
Duggan & Smith's No. 2 Sutherland, 330 ft. from S and W lines of Sur. No. 511 ..... T.D. 1,746 ft.; drlg.
Frank Gravis' No. 3 Schallert in Sur. 255 (Paiangano salt dome) ..... T.D. 1,408 ft.; tested dry.
J. A. Leindecker's No. 1 G. W. Sutherland, 560 ft. from S line, 450 ft. from W line of Survey No. 183 ..... Spudded in and S.D.; moving in heavier rig.
Payne & Vernon's No. 1 A. Roach, 865 ft. from E line, 45 ft. from S line of Blk. 7, Sur. No. 457 ..... Rigged up.
Plymouth Oil Co.'s No. 1 Hoffman, center of Sur. 113 .... Rigged up.
Smith & Capps' No. 1 Peters, 330 ft. from S line, 340 ft. from W line of NE of Sur. No. 178 ..... Rigging up.
Sun Oil Co.'s No. 1 Duval County Ranch Co., 1,650 ft. to N and W lines of Sur. No. 78, or 330 ft. to S and W lines of E half of NW of Sur. No. 76 ..... Location.

FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Haiff & Oppenheimer, 1,200 ft. from N line, 200 ft. from E line of W. F. Haisel Sur. ..... T.D. 3,675 ft.; drlg.

GUADALUPE COUNTY

B. E. Brock's No. 1 Ogletree, 1,600 ft. from W line, 450 ft. from S line of tract in Robert Smith Sur. ..... T.D. 1,860 ft.; S.D.
Keene & Russell's No. 1 Lowman, 300 ft. from E line, 350 ft. from N line of tract in George Allen Sur. ... T.D. 380 ft.; S.D.
H. A. Suttle's No. 1 O. J. Halm, 150 ft. from N line, 1,900 ft. from E line of 331-acre tract in J. Kent Sur. ..... T.D. 1,825 ft.; drlg.; no chalk.
J. T. Stover's No. 1 Paul Hoffman, 1 mile SW of Saimar Pool ..... T.D. 1,892 ft.; fishing.
F. W. Tong's No. 1 Henry Rahe, 650 ft. to SW lines, 1,300 ft. to NW lines, Moses Baker Sur. ..... Moving in machinery.

GOLIAD COUNTY

Hoffman & Gooch's No. 1 Fromme, 600 ft. from N and 1,200 ft. from W line of Peter B. Dexter Sur. ..... T.D. 2,470 ft.; standing.
Rowan & Hope and Phillips Pet. Co.'s No. 1 Irby, 6,500 ft. from E line, 3,000 ft. from N line of 2,080-ac. tract in Ybarbo Sur. ..... T.D. 4,514 ft.; abnd.

GONZALES COUNTY

Edmiston & Kirby Pet. Co.'s No. 1 J. W. Ward, Jr., 300 ft. from N line, 833 ft. from W line of tract in Dan McKay Sur. ..... T.D. 1,592 ft.; standing.
Kirby Pet. Co. and Bennett's No. 1 Lum & Boulder, 1,100 ft. to SE lines, 100 ft. to SW lines, Russell Ward Sur. ..... Spudded in for Edwards lime test.

HIDALGO COUNTY

Barrett-Kanellos' No. 1 J. B. Brock, 7 miles W and N from Mission (on Monte Cristo road) ..... T.D. 4,590 ft.; S.D.
Palm City Pet. Co.'s No. 1 J. T. Lomax, 7,500 ft. from S and E lines of San Roman Sur. ..... T.D. 1,445 ft.; drlg.
Dayle L. Smith's No. 3 Daskam, SW part of county ..... T.D. 1,726 ft.; S.D.

JIM HOGG COUNTY

Clark & Cowden's No. 1 E. Vela, 2,500 ft. S line, 3,472 ft. to W line of Share 1 El Peyote grant ..... T.D. 2,240 ft.; drlg.
Cole Pet. Co.'s No. 1 W. Allen, 990 ft. to E line, 1,320 ft. to N line of Blk. 13, Randado grant ..... Location.
D. C. DeWitt's No. 1 Gomez, 1,110 ft. from N line, 150 ft. from W line of Sur. No. 12, SW part of county ... T.D. 1,457 ft.; to drill deeper.
Jack Tarver's No. 1 Martinez, 300 ft. from E line, 1,600 ft. from N line of Sur. No. 623 ..... T.D. 3,007 ft.; cored 7 ft.; sand showing oil; will test.

JIM WELLS COUNTY

Crawford et al's No. 1 Hoffman, 1,980 ft. N and 660 ft. W of most easterly SE cor. of Hoffman 7,000-ac. tract in La Trinidad grant ..... T.D. 2,517 ft.; drlg.
E. A. Lain's No. 1 Vernon Porter, 800 ft. from S line, 400 ft. from W line of 200-ac. tract in Sur. 25 ..... T.D. 1,525 ft.; drlg.

KARNES COUNTY

A. E. Edmiston's No. 1 O. L. Cochran, 150 ft. from S line, 500 ft. from E line of farm in D. B. McConnell Sur. ..... T.D. 2,014 ft.; drlg. at 1,600 ft. in sidetracked hole.

KERR COUNTY

Evans & Gant's No. 1 Estelle Young, 150 ft. out of NW cor. of Sec. 28, E. A. Burge Sur. ..... T.D. 1,310 ft.; standing.
Verde Oil & Gas Co.'s No. 1 J. D. Witt, 1,320 ft. from N line, 1,220 ft. from W line of Sec. 1,923 in Hamilton Sur. ..... T.D. 118 ft.; standing.

KLEBERG COUNTY

H. Carter's No. 1 R. H. Simmons, 150 ft. from S and W lines of tract in Sec. 7, King Sur. No. 3 ..... T.D. 3,205 ft.; resuming drlg.
Harris et al's No. 1 Dennett, north of Kingsville Field .. Spudded in and set surface csg.

LIVE OAK COUNTY

Brown & Whitting's No. 1 A. Laseter, 900 ft. from S line, 1,200 ft. from W line of tract in S. Hays Sur.... Location.
J. H. Durbin's No. 1 Marbach, 1,900 ft. from W line, 425 ft. from SE line of tract in S. Hayes Sur. ..... T.D. 900 ft.; fishing.
J. A. Harper's No. 1 fee, 2,130 ft. to N line, 510 ft. to E line of farm, J. Pointevant Sur. 27 ..... T.D. 1,100 ft.; showing oil, wtg on csg.

LEE COUNTY

Paton Bros.' No. 1 Turner, 150 ft. due SE of No. 1-A Turner, junked at 5,675 ft. in the David Hudson Sur., 2 miles SE from Tanglewood ..... Location.

McMULLEN COUNTY

Jaqua & Crow's No. 1 Hagist, 330 ft. from N and W lines of R. W. Mills Sur. No. 467 ..... Spudded in.
Skinner & Bailey's No. 1 Burmeister in SW cor. of Sec. 14, Blk. 1, C.H.&H. Ry. Sur. ..... Location.

MEDINA COUNTY

James E. Greenlee's No. 1 Feasler, 600 ft. from N line and 2,400 ft. from E line of L. G. Harrison Sur. No. 799 ..... Spudded in.
Robertson Drilling Co.'s No. 1 Little, 2,350 ft. from N line, 1,500 ft. from E line of E. B. Rutledge Sur., southern part of county ..... T.D. 3,105 ft.; drlg. in Edwards said to show oil.
F. Ryal's No. 1 G. Martin, 150 ft. from S and W lines of Blk. 368, H. Castro Sur. ..... Spudded in and S.D.

MILAM COUNTY

Bridwell's No. 1 Terry, 1,100 ft. from N line, 800 ft. from W line of tract in Jose Leal Sur. ..... T.D. 750 ft.; drlg.
M. W. Eiser's No. 1 Citizen's Nat. Bank of Waco, 1,325 ft. from S line, 625 ft. from E and W lines of tract in Wm. Punchard Sur. ..... T.D. 1,842 ft.; reaming at 1,800 ft.
Glass et al's No. 1 Ellison, 700 ft. from N line, 1,350 ft. from W line of 200-acre tract in Samuel Frost Sur ..T.D. 1,610 ft.; S.D.
Huff & Keck's No. 1 J. W. Lee, 1,200 ft. to E line, 265 ft. to S line, D. Harmon Sur. ..... T.D. 1,425 ft.; drlg.
Keyser & Roberts' No. 3 Ward, 125 ft. NE of No. 2 Ward, in Levi Taylor Sur. ..... T.D. 1,343 ft.; abnd.
Michalk & Clark's No. 1 Johnson, 60 ft. S of No. 1 Johnson on 100-ac. lease in Juan Jose Acosta Sur. ..T.D. 2,230 ft.; S.D.

M. C. Moore et al's No. 1 H. A. Camp, east of San Gabriel ..... T.D. 1,070 ft.; drlg. broken chalk and Serpentine.

Wilder, Van Huss & Edlston's No. 1 Von Groton in M. J. Delgado Sur. ..... T.D. 2,857 ft.; S.D.

NUECES COUNTY

Carter, Kelley et al's No. 1 Harvey, 5 miles NW of Saxet Field ..... Location.

Gulf Port Oil Co.'s No. 1 Luby, 2,044 ft. from E line, 2,142 ft. from S line of John M. Luby, 531.74 acres, Blk. 1 of Mary J. Luby Share 1-G of Anna Collins Petronilla pasture, 24 miles SW from Corpus Christi.. T.D. 1,070 ft.; S.D. for fuel.

STARR COUNTY

Adams & Modest's No. 1 Wood, 2,070 ft. from W line of Porcion 84, Camargo, and 1,472 ft. N of Missouri Pacific Railroad ..... Derrick.

Hartshorn et al's No. 1 Hinijosa, 835 ft. W of Hobbronville road and 2,500 ft. from S line of Porcion 110.... Location.

S.&B. Oil Co.'s No. 1 Crown Brick & Tile Co., 1,800 ft. S of State Highway No. 4 and 580 ft. from W line of Porcion 87, near La Puerta ..... Rigging up.

D. H. Carpenter's No. 1 Salinas, 3,087 ft. from N line, 1,221 ft. from E line of Share 85 of partition of Porcions 38, 39, 40 in jurisdiction of Reynosa ..... T.D. 250 ft.; set csg.

W. P. Chancellor's No. 1 A. Guerra, 24,000 ft. N of SW cor. and 2,600 ft. from W line of Share 6 in the Joe Grant Sur. ..... Rigging up.

Coastal O. & G. Co.'s No. 1 Kelsey Bass, 448 ft. to N line, 150 ft. to W line of Tract 52, Sur. 2, Porcion 86. T.D. 1,700 ft.; drlg.

L. W. Connor's No. 1 Sanchez, cen. of Sur. 344 .... Waiting on water line.

W. T. Gilman & Travelers Oil Co.'s No. 1 C. Ramos, 1,170 ft. from SW line, 1,470 ft. from NW lines of Sur. No. 150 ..... Spudded in and S.D.

H. C. Harter's No. 1 Gonzales, 990 ft. from N line, 1,150 ft. from E line of Share 62-B of Subd. of Porciones 70 and 71, Jurisdiction Mier ..... T.D. 410 ft.; standing.

Jeffries and Lambeth Drilling Co.'s No. 1 Starr County Cattle Co., 11,572 ft. from N line, 2,490 ft. from E line of Porcion 89, Jurisdiction of Camargo .. .... T.D. 822 ft.; drlg.

LaJoya Oil & Gas Co., making location in Porcion 29 in NE part of county .. .. Location.

Morrison et al's No. 1 V. G. Guerra, 1,980 ft. from SW line, 450 ft. from SE line of Sur. No. 23 ..... T.D. 400 ft.; drlg.

John Pope, trustee's No. 2 H. Gonzales, 150 ft. W of cen. of E line of Sur. No. 339 .... Location.

Smith et al's No. 1 Lopez, 200 ft. from E line, 1,000 ft. from S line of Blk. 20, Share 65 of Porcion 80, Jurisdiction Camargo ..... T.D. 1,515 ft.; drlg.

S. L. Williams' No. 1 L. G. Madrigal, 150 ft. from N and W lines of Share 5-A of Porcion 72 of Jurisdiction of Mier ..... T.D. 332 ft.; abnd.

George Stobaugh's No. 1 Seabury et al, 150 ft. from S and W lines of Porcion 107 ..... TD. 278 ft.; no report.

TRAVIS COUNTY

E. A. Field's No. 1 B. H. Bloor, 150 ft. from S line, 500 ft. from W line of 400-ac. tract in NE part of county.. T.D. 500 ft.; drlg.

Fritz Fuchs' No. 1 Swedish, 2,350 ft. from NE line, 750 ft. from NW line of Thomas Smith Sur . ..T.D. 1,788 ft.; S.D.

UVALDE COUNTY

J. V. Scoggin's No. 1 Olive Henry, 1,100 ft. from N and E lines of tract in Hugh Kilgore Sur. .... Spudded in.

WEBB COUNTY

O. W. Killam's No. 1 E. Garcia, center Blk. 2, Blk. 2 Sur. 461, W from Mirando City ..... T.D. 2,105 ft.; drlg.

Newton Drilling Co.'s No. 1 A. Garcia, 2,550 ft. from S line, 2,340 ft. from W line of Sur. No. 52, 2 miles SW of Carolina Texas Field ..... T.D. 2,080 ft.; drlg., shows oil.

WILLIAMSON COUNTY

McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tract in B. Manlove Sur ..... T.D. 740 ft.; S.D.

ZAPATA COUNTY

Donohoo et al's No. 1-A Garcia, 150 ft. from NE and SE lines of Blk. 7 of Subd. of 700-ac. of Share A, Charco Redondo grant ..... T.D. 1,003 ft.; no report.

Huff & Fudge's No. 1 Uribe, 150 ft. from NW and SW lines of Blk. 8, Share 7, Partition 6, San Ignacio Subd. of Borrego grant ..... T.D. 300 ft.; standing.

Hunt & Polk's No. 1 H. Ramirez, 7,075 ft. N of S cor. and 2,918 ft. from W line of Share A of Villa grant.. T.D. 860 ft.; abnd.

F. J. Ossenbeck's No. 1 Adelfonso Rameriz, 600 ft. W of Zapata-Roma highway, 150 ft. from SE line of Porcion 18 ..... Location.

H. L. Sargent et al's No. 1 Antonio Gutierrez heirs, 922 ft. from W line, 472 ft. from S line of Tract 2, Blk. 5, Nixon Subd., Porcion 10, San Ignacio Borrego grant ..... T.D. 1,350 ft.; drlg.

Stevens & Pope's No. 1 Martinez, 150 ft. from S and E lines of Blk. 95, C. H. Sprague Subd. of Sur. 434 ...T.D. 262 ft.; drlg.

Winch & Billings' No. 1 S. Benavides, 1,018 ft. from NW line, 1,107 ft. from NE line of Blk. 2 of O'Hern & Fansler Sub. of Villa grant ..... Rigged up.

Southwest Texas Proven Areas

Week Ending October 8

NORMANNA POOL—BEE COUNTY

Gulf Coast Oil Co.'s No. 5 Hicks, 600 ft. E of Nichols Oil Co.'s No. 2 Hicks ..... Derrick.

Wallace Morgan's No. 1 Scott, half mile E of Normanna Pool ..... Making location.

NORTH PETTUS POOL—BEE COUNTY

Gulf Port Oil Co.'s No. 5 McKinney, 660 ft. due NE of No. 4 ..... T.D. 3,680 ft.; set csg.

TULETA POOL—BEE COUNTY

O'Neil and C.R.M.'s No. 1-A Harris, 150 ft. from N and W lines of SW SE Sec. 2 of Ragsley Subd. of Uranga grant ..... T.D. 4,096 ft.; rocking in with gas.

Nichols and C. R. & M. Drilling Co.'s No. 3 Harris in center of Blk. 10, Sec. 13, Ragsley Subd. of Urabga grant ..... T.D. 3,560 ft.; drlg.

Nichols and C.R.M. Drlg. Co.'s No. 2 Harris, 250 ft. from S and E lines of Blk. 7, Sec. 2 of Ragsley Subd. of Uranga Sur. ... . Location temp. aband.

The Texas Company's No. 2 Cox, 250 ft. from S and W lines of SE of SW of SW of Sec. 2, Ragsley Subd. of Uranga tract ..... Location.

GAS RIDGE—BEXAR COUNTY

American Gas Co.'s No. 5 W. H. Kennon, 1,750 ft. from S line, 2,000 ft. from E line of 400-acre tract in Maria F. Rodrigues Sur. ..... T.D. 2,230 ft.; to set csg.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 3 J. H. Gembler, 180 ft. from N and E lines of tract in A. Manachaca Sur. 51. T.D. 1,416 ft.; drlg.

E. M. Carl's No. 1 F. Gembler, 180 ft. from N line, 750 ft. from E line of tract in J. Montez Sur. ..... T.D. 825 ft.; moving in heavy rig

Gatlin Oil Co.'s No. 15 I. A. Beck, 150 ft. from S and E lines of tract in J. Montez Sur. .... Location.

W. R. Swearingen's No. 11 Halbardier, 400 ft. SE of No. 10 Halbardier, J. F. Perez Sur ..... Location.

ALTA MESA POOL—BROOKS COUNTY

Ed East's No. 3 Randolph Garcia, 1,000 ft. from S line, 200 ft. from W line of 2,161-ac. tract in La Escantada grant ..... T.D. 100 ft.; drlg.

DUNLAP POOL—CALDWELL COUNTY

Bob Rose's No. 2-B Walker 46-acre tract, 360 ft. from NW line, 500 ft. from SW line of tract in Solomon Seal Sur. ..... T.D. 2,255 ft.; preparing to shoot.

SALT FLATS—CALDWELL COUNTY

Hickman et al's No. 1 C. A. Dickerson, 150 ft. N of cen. of S line of tract in John D. Rains Sur. ..... T.D. 2,172 ft.; drlg. deeper.

WEBSTER POOL—CALDWELL COUNTY

C. J. Webster Oil & Gas Co.'s No. 1 C. F. Robertson, 700 ft. from E line, 200 ft. from N line of 100-ac. tract, John A. Neill Sur. ..... Derrick.

NORTH GOVERNMENT WELLS—DUVAL COUNTY

R. B. Byrd's No. 3 Wright, 660 ft. from W line, 330 ft. from N line of Sur. No. 101 ..... Location.

Central Producers, Inc.'s No. 3 Tuck & Johnson, 330 ft. from N and E lines of SE SW of Sur. No. 42 ..... Location.

Hamill & Hamill's No. 2 C. W. Hahl, 330 ft. to N and W lines of N half of SE of Sur. No. 42..... Location.

Magnolia Pet. Co.'s No. 1 J. V. Allen, 330 ft. to N and W lines of S half of SE of Sur. 42 ..... Rigging up.

Magnolia Pet. Co.'s No. 4 J. T. Johnson, 330 ft. from N line, 990 ft. from W line of SW NE of Sur. No. 44. Location.

San Diego Oil Corp.'s No. 5 E. Riley, 330 ft. from S and W lines of NW NW of Sur. No. 46 ..... Location.

San Diego Oil Corp.'s No. 2 L. Bennett, 500 ft. N of No. 1, 250 ft. to W line of SE of SW of Sur. No. 44..Spudded in.

San Diego Oil Corp.'s No. 4 E. Riley, 330 ft. from N line, 550 ft. from W line of NW NW of Sur. No. 46.. Rigging up.

Southwest Drlg. Co.'s No. 4 R. Wendt, 330 ft. from N and E lines of SE SE of Sur. No. 43 ..... Location.

Seacord & Putnam's No. 1 Wendt, 150 ft. from S and E lines of NE NE of Sur. No. 44 ..... Rigging up.

The Texas Co.'s No. 1 M. B. Johnson, 330 ft. from S and E lines of N half SW of Sur. 42 ..... Drlg. 1,475 ft

The Texas Co.'s No. 1 C. W. Freer, 150 ft. from S and E lines of SE NE, Sur. No. 45 ....Location.

Whisenant, Trenchard and French Oil Co.'s No. 3 Hahl, 620 ft. from S line, 250 ft. from E line of SW of SW of Sur. No. 44 ..... Location.

SOUTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Humble Oil & Ref. Co.'s No. 7 Paul White, 1,320 ft. from W line, 3,630 ft. from S line of Sur. No. 58 .....T.D. 2,294 ft.; set csg.

COLE POOL—DUVAL COUNTY

Cole Petroleum Co.'s No. 78 Benavides, 108 ft. from SE line, 182 ft. from SW line of Blk. 8, Sur. 19 .....T.D. 1,650 ft.; coring.

O. W. Killam's No. 23 Bruni, 50 ft. from NW and SW lines of Blk. 34, Sec. 8 of Adams Sub. of Bruni lands in the Arispe Grant Sur. ..... T.D. 2,310 ft.; drlg.

SARNOSA POOL—DUVAL COUNTY

The Texas Co.'s No. 1 R. L. Brown, 635 ft. from SE and SW lines of N quarter of Sur. No. 574 .....T.D. 1,150 ft.; drlg.

John F. Camp's No. 2 Well, 1,200 ft. N. 18 deg. W of No. 1 Well in Sur. No. 570 ..... T.D. 2,320 ft.; drlg.

Smith & Capps' No. 4 Duval County Ranch Co., Sur. 576..T.D. 2,340 ft.; set csg., waiting on cement.

Sun Oil Co.'s No. 2 Cuellar (Cano), 150 ft. from SW and SE lines of E¼ of Sur. No. 576..... Rigged up.

Thomas & Tarver, Inc.'s No. 2 Duval County Ranch Co., 660 ft. NW of No. 1 ..... Drlg. 2,500 ft.

SAL-MAR FIELD—GUADALUPE COUNTY

Sal-Mar Oil & Gas Co.'s No. 1 Hempel, 1,600 ft. from S line, 150 ft. from E line of tract in G. W. Williams Sur. ..... T.D. 2,023 ft.; dry in chalk.

George E. Smith's No. 1 Behring, 1,250 ft. from E line, 150 ft. from N line of G. W. Williams Sur. ....T.D. 2,362 ft.; plugging back.

A. W. Wormser's No. 1 Harris, 150 ft. from N line of tract and 150 ft. E of creek in Green Dewitt Sur.....Derrick.

HORD'S CREEK—GOLIAD COUNTY

Slick-Seeligson, Inc.'s No. 1 Kaufman, 660 ft. from SE line, 330 ft. from SW line of 4.265-ac. tract ..... Drlg. 850 ft.

SLICK POOL—GOLIAD COUNTY

Slick-Seeligson's No. 2 Poetter, 330 ft. to SE and SW lines, 1,200 ft. SW of No. 1, Obid Marshall Sur. .....Derrick.

SANDIA POOL—JIM WELLS COUNTY

Hughes and Long's No. 1 Wade, center of Blk 2 of Wade Ranch Sub. ..... Spudded in.

Larcro Gas & Pet. Co.'s No. 3 Wade, 2,000 ft. S, 33 deg. W of No. 2 Wade, thence 1,970 ft. N. 57 deg. W ... ..Material on ground.

JACOB POOL—McMULLEN COUNTY

Jacob, Buzzini & Pickett's No. 6-A Jacob, 1,320 ft. S, 15° W of No. 3-A ..... T.D. 957 ft.; reset csg., well flowing oil.

F. B. Lefevre's No. 1 Leonard Jacob, 8,107 ft. S, 51 deg. W of E cor. and 1,697 ft. N, 39 deg. W, of SE line of W. D. Benham Sur. ..... Location.

Longhorn Oil Co. and American Gas Co.'s No. 1 Lark, 2,790 ft. from N line, 1,150 ft. from W line of Lark tract, E.W.B. Scrugham Sur. ..... T.D. 1,007 ft.; bailing.

WENTZ POOL—McMULLEN COUNTY

V. G. Schimmel's No. 2 Two Rivers Ranch Co., 100 ft. E of No. 1 ..... T.D. 773 ft.; set csg.

ADAMS FIELD—MEDINA COUNTY

Yantis Oil Co.'s No. 1-A Adams, 50 ft. from No. 1 .....T.D. 200 ft.; drlg.

SAXET FIELD—NUECES COUNTY

Houston Oil Co.'s No. 1 Walton, 170 ft. from N line, 220 ft. from E line of 500-ac. tract ..... Rigging up.

Gulf Coast Oil Co.'s No. 2 Perkins & Gasse, 650 ft. from N line, 990 ft. from E line of Sec. 26 of Shepherd farm lots ..... T.D. 4,887 ft.; set csg.

Gulf Coast Oil Co.'s No. 2 Bliss, 660 ft. W of No. 1 Bliss..T.D. 4,697 ft.; trying to test.

Gulf Coast Oil Co.'s No. 1 W. L. Dinn, 330 ft. from N and E lines of lease in School Sur. No. 412 ... .T.D. 4,150 ft.; drlg.

McCarthy-Rogers-Nix et al's No. 1 Isencee, 151 ft. from W line, 172 ft. from N line of Blk. 12 of Shepherd farm lots ..... T.D. 4,550 ft.; gas well spraying oil.

Oso Drillers, Inc.'s No. 3 Roark, midway between Nos. 1 and 2 ..... T.D. 4,867 ft.; setting csg.

Saxet Oil Co.'s No. 9 Dunn, 130 ft. from N line, 164 ft. from W line of lease, south offset to Oso Drillers' No. 2 Roark ..... Moving in.

LOS OLMOS POOL—STARR COUNTY

V. V. Combs' No. 1 Kelsey Bass, 150 ft. from N and W lines of NE NE, Sec. 6, Porciones 75, 76 and 77 .....Location.

Frank Doyno's No. 1 Seabury, 450 ft. from S line, 815 ft. from E line of 80-ac. tract in Share 5, of W portion of Porcion 75 ..... T.D. 260 ft.; drlg.

Los Olmos Oil & Gas Co.'s No. 26 Kelsey Bass, in NW SE of Sur. 7, Sub. of Porcions 75, 76, 77, Jurisdiction of Camargo ..... Spudded in.

R. A. Mitchell's No. 1 Kelsey Bass, 150 ft. from S and W lines of NW SE of Sur. 8, Sub. Porcions 75, 76, 77, Jurisdiction of Camargo ..... Location.

J. P. Moore and C. B. Van Matre's No. 1 Seabury et al, 150 ft. from E line, 750 ft. from S line of Share 5, Subd. of W part of Porcion 75 ..... T.D. 50 ft.; drlg.

Munday Bros.' No. 1 Seabury, 840 ft. from E line, 4,550 ft. from S line of Share 5, Subd. of W two-thirds of Porcion 75, Jurisdiction of Camargo ..... Rigging up.

Tarver & Nance, Inc.'s No. 6 Kelsey Bass, 750 ft. from W line, 150 ft. from S line of SW SE of Sur. 7, Porcions 75, 76, 77 of Camargo Sur. ..... T.D. 250 ft.; drlg.

Tollen, Floyd & Warner's No. 1 Seabury, 450 ft. from S line, 814 ft. from E line of 80-ac. tract in Share 5, W part of Porcion 75 ..... T.D. 265 ft.; drlg.

RIO GRANDE CITY POOL—STARR COUNTY

Allison & Doyle's No. 1 Salinas, 150 ft. to N and E lines of Blk. 2, Share 15-B, Porcions 80 and 81, Camargo..Location.

Mundy and others' No. 1 Salinas, 190 ft. to S and W lines of Blk. 12, Share C-38, Porcions 80 and 81, Camargo .. .. Location.

Meyers & McCaghren's No. 2-A Frank Doyno, 500 ft. to S line, 768 ft. to W line of Blk. 4, Share A-77, Porcions 80 and 81 ..... Rigging up.

S. S. Smith's No. 1 O'Meara in Share 76 in W half of Porcion 79, Jurisdiction Camargo ..... T.D. 1,650 ft.; no report.

LAUREL POOL—WEBB COUNTY

Montex Oil Co.'s No. 1 M. Vela, 479 ft. from N line, 490 ft. from W line of Blk. 4, Sur. No. 267 ..... Derrick.

ESCOBAS POOL—ZAPATA COUNTY

The Texas Co.'s No. 13 Measles, 2,132 ft. from SE line, 16,284 ft. from SW line of Cerrito Blanco grant ..... T.D. 1,188 ft.; comp. 60 bbls. daily.

CHARCO REDONDO POOL—ZAPATA COUNTY

L. G. Smith's No. 1 J. M. Martinez, 350 ft. from NE and SE lines of Blk. 15, Share B, Dunke's Subd. of Charco Redondo grant ..... Location.

Windsor Oil Co.'s No. 1 Martinez, in NE of Blk. 15, of W. R. Duke Subd., Charco Redondo grant ..... T.D. 1,460 ft.; drlg.

MARTINEZ POOL—ZAPATA COUNTY

H. Muckelroy, Jr.'s No. 1 A. Trevino, 150 ft. from S and E lines of Blk. 10, Sur. No. 411 ..... T.D. 1,600 ft.; drlg.

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 57)

MOREHOUSE PARISH

Feazel & Kaill's No. 1 Davenport, Sec. 28-21-4e. ..... Drlg. 2,490 ft.

H. W. Snowden's No. 1 Meyers, 330 ft. S and E, SW cor. NE NE, Sec. 15-22-7e. ..... Derrick.

NATCHITOCHES PARISH

W. M. Coates' No. 1 Rose Olive, Sec. 10-9-10, 660 ft. S and E from cen. of Sec. ..... S.D. 2,010 ft.

Dr. H. S. Gerson's No. 1 Smith, Sec. 11-10-8, 2,000 ft. N, NE cor. of irregular Sec. 10, in Sec. 11. ..... T.A. 1,875 ft.

Dr. H. S. Gerson's No. 3 Smith, approximately 1,000 ft. N of NE cor. of irregular Section 10, Sec. 11-10n-8w. Drlg. rock 315 ft.

J. B. Oil Co.'s No. 1 Hankins et al, Sec. 67-10-7. ..... Rigging up.

R. A. Keaton's No. 1 Bastrop State Bank, 200 ft. N and W, SE cor. NE NW, Sec. 17-10-6 ..... Location.

R. A. Keaton's No. 1 Stephens, Sec. 25-10-6, 320 ft. N and W, SE cor. NW NW. ..... S.D. 1,700 ft.

Natchitoches Pet. Co.'s No. 1 Edenborn, 2,240 ft. W, 1,320 ft. S, NE cor., Sec. 4-11-6w. ..... Drlg. 1,800 ft.

H. W. Perritt's No. 1 Cook, 165 ft. E, 105 ft. N, SW cor. NE SW, Sec. 3-8-9. ..... S.D. 2,992 ft.

Sabine Bayou Dev. Co.'s No. 1,130 Caw, 330 ft. N and E, SW cor. SE, Sec. 9-13-5 ..... Drlg. 1,850 ft.

Texana Oil Co.'s No. 1 Clark-Morris Lbr. Co., 678 ft. N, 660 ft. E. C. Sec. 33-5-8 ..... S.D. 3,475 ft.

OUACHITA PARISH

Monroe Oil & Royalties Co.'s No. 1 Thieler, 150 ft. N and E, SW cor. SE NW, Sec. 34-18-2e ..... S.D. 1,950 ft.

Wilson & Mitchell's No. 1 Williams, Sec. 5-16-1e, 330 ft. E, 340 ft. S, NW cor. SW SE. ..... S.D. 3,430 ft.

RED RIVER PARISH

G. F. Davis' No. 1 Pierson, 500 ft. S, 317 ft. E, NW cor. SW NW, Sec. 12-14-11. ..... Location abd.

Edward & Clay's No. 1 Delta Pecan Co., 1,600 ft. N, 450 ft. E, SW cor., Sec. 27-13-11. ..... S.D. for fuel 400 ft.

Lawrence Decker, tr.'s No. 1 Madden, 1,650 ft. S and W, NE cor., Sec. 31-14-10 ..... Drlg. 2,775 ft.

RICHLAND PARISH

National Gas Co.'s No. 1 Singletary, 1,980 ft. N, 660 ft. W, SE cor., Sec. 20-18n-7e. ..... S.D. 2,515 ft.

SABINE PARISH

Adams & Roberson's No. 1 Peterson, 406 ft. N, 200 ft. W, SE cor. NE NE, Sec. 35-8-13 ..... S.D. 100 ft.

J. M. Bridges' No. 1 Moore, 660 ft. E, 330 ft. N, SW cor. NE NW, Sec. 5-9-12. ..... Comp. flowing 20 bbls. 3,277 ft.

Bridwell O. & G. Co.'s No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NE NW, Sec. 31-8-10. ..... Dry and abd. 2,808 ft.

R. E. Brooke's No. 1 A. Gray, 330 ft. N and W, SE cor. SW NE, Sec. 35-8-13 ..... Location.

John R. Bunn's No. 1 Sabine Lbr. Co., 295 ft. S, 336 ft. W, NE cor. SW NE, Sec. 9-7-13. ..... Testing 2,422 ft.

Byers et al's No. 1 Bishop, SW cor. SW NE, Sec. 16-7-13 ..... S.D. 41 ft.

Clopton et al's No. 1 Garcia, 330 ft. N and W, SE cor. SE NW Sec. 4-7-13 ..... Derrick.

Cloud & Bolin's No. 1 Bowman-Hicks, SE cor. NE NE, Sec. 26-9-13 ..... Set 12⅛-in. 42 ft; drlg. 1,000 ft.

W. M. Coates' No. 1 Gray, 330 ft. N and W, SE cor. SW, Sec. 3-7-13 ..... Location abd.

W. M. Coates' No. 2 Gray, 330 ft. S and W, NE cor. SE SW, Sec. 3-7-13 ..... Location abd.

Coates Pet. Co.'s No. 2 Stille, 330 ft. N and E, SW cor. SE SW, Sec. 35-8-11 ..... W.O.S.R. 2,465 ft.

Coates Pet. Co.'s No. 3 Stille, 330 ft. N and E, SW cor., Sec. 35-8-13 ..... Location.

Mark Curtis et al's No. 1 Sabine Lbr. Co., 330 ft. N and W, SE cor. NE SE, Sec. 35-8-13 ..... S.D. 2,064 ft.

R. G. Daniels' No. 1 Armstrong, SE cor. SE NE, Sec. 31-8-10 ..... Derrick.

Mrs. Dabney's No. 1 Hill, 366 ft. N, 335 ft. W, SE cor. NE NE, Sec. 5-7-11 ..... Location.

Mrs. Dabney's No. 2 Hill, 330 ft. S, 335 ft. W, NE cor., Sec. 5-7-11 ..... Location.

R. E. Davidson's No. 1 Davis, 600 ft. S, 125 ft. E, NW cor., Sec. 28-7-11 ..... S.D. 2,823 ft.

William DeSota's No. 1 Mooney, 350 ft. S, 395 ft. E, NW cor., Sec. 35-8-13 ..... Derrick.

Flinchbaugh & Myers' No. 1 Aaron, 250 ft. S and E, NW cor., Sec. 32-9-13. ..... S.D. 1,975 ft.

R. L. Gay, tr.'s No. 13 Bowman-Hicks, 330 ft. S, 390 ft. W, NE cor. SW SW, Sec. 14-7-14. ..... Set 6-in. 2,125 ft.

R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 300 ft. W. NE cor. NW NW, Sec. 10-8-13. ..... Coring shale and lime 6,393 ft.

Gibson & Johnson, Inc.'s No. 1 Frost Lbr., 330 ft. S and E. from center Sec. 19-9-13. ..... Bailing 1,625 ft.

Gibson & Johnson, Inc.'s No. 2 Frost Lbr., 330 ft. S and W. NE cor. NW NE, Sec. 15-9-13. ..... Derrick.

W. N. Hankins' No. 1 Tilley, 200 ft. E, 30 ft. S, NW cor. SE SE, Sec. 26-8-13 ..... Arranging to set 4½-in. 7,162 ft.

Hollis et al's No. 1 Sabine State Bank, 350 ft. N and W, SE cor. SW SW, Sec. 28-8-11. ..... S.D. 41 ft.

Ab Jones' No. 1 Garcia, 200 ft. S and W, NE cor. NW SE, Sec. 4-7-13 ..... Set 6-in. 2,070 ft.

G. E. Jordan's No. 1 Dew, 330 ft. N, 340 ft. E, SW cor. SW SE, Sec. 34-8-11 ..... S.D. for wtr. 950 ft.

E. P. Kilgore's No. 1 Thomas, 330 ft. S, 200 ft. E, NW cor. SE, Sec. 30-8-11. ..... Derrick.

Lane, Bundy & Allen's No. 1 Andree, Sec. 22-7-11. ..... Derrick.

Geo. LeGrand's No. 1 McGough, Sec. 3-8-10. ..... Set 6-in. 2,180 ft.

H. C. Maulding's No. 1 Moores, 330 ft. S and W, NE cor. SE NE Sec. 16-7-13 ..... Set 6-in. 2,077 ft.

Paul L. Miller, tr.'s No. 1 Chadick, 550 ft. S, 178 ft. E, NW cor. NE SW, Sec. 32-8-10. ..... W.O.S.R. 2,589 ft.

E. F. Neely's No. 1 Rains, 660 ft. N, 100 ft. W, SE cor., SW NW, Sec. 14-7-11 ..... W.O.S.R. 2,541 ft.

W. M. Neely's No. 1 Buvens, 350 ft. S, 100 ft. E, NW cor. NE. Sec. 21-7-11. ..... Drlg. 1,500 ft.

C. D. Neff, tr.'s No. 1 Snell, Sec. 9-7-11, 350 ft. N, 660 ft. W. SE cor. Sec. ..... W.O.S.R. 2,509 ft.

H. W. Perritt's No. 3 Brown Lbr. Co., 519 ft. S, 455 ft. W, NE cor. NW NE, Sec. 31-8-10. ..... S.D. 400 ft.

Roy Raines et al's No. 1 Beard, 730 ft. E, 700 ft. N, SW cor. SW SE, Sec. 8-8-1e. ..... Derrick.

Thornton et al's No. 1 S. S. Martinez, 355 ft. S, 330 ft. W, NE cor. SE NE, Sec. 4-7-13 ..... S.D. 2,048 ft.

Otis A. Roberts' No. 1 Sabine Lbr. Co., 324 ft. S, 481 ft. W, NE cor. SW NE, Sec. 5-7-13 ..... S.D. 2,500 ft.

Roberts & Sledge's No. 1 La. Long Leaf Lbr. Co., 290 ft. N, 468 ft. E, SW cor. NE SE, Sec. 29-8-10. ..... Derrick pattern.

Robeste & Sledge's No. 1 Lefkobita, 346 ft. S, 673 ft. E, NW cor. SE NE, Sec. 5-7-13 ..... Derrick abd.

Robeste & Sledge's No. 2 Sabine Lbr. Co., 803 ft. W, 796 ft. N, SE cor. SE SW, Sec. 5-7-13 ..... Fishing 2,480 ft.

Robeste & Sledge's No. 3 Sabine Lbr. Co., 413 ft. N, 479 ft. W, SE cor. SE SW, Sec. 32-8-13 ..... Derrick abd.

Roshko & Labarre's No. 1 Maines, 427 ft. E, 114 ft. N, SW cor. SE NE, Sec. 35-8-11. ..... Derrick pattern.

Skidmore & Mize's No. 1 Stoker, 440 ft. N, 225 ft. E, SW cor. SE NW, Sec. 33-8-10. ..... Derrick.

C. W. Smith et al's No. 1 Pattison, 330 ft. S and E, NW cor. SE NW, Sec. 33-10-11. ..... Derrick.

H. R. Smith et al's No. 1 La. Long Leaf Lbr. Co., Sec. 12-7-11, 330 ft. S and W, NE cor. NW SW. ..... Location abd.

Sneed & Sneed's No. 1 Pearce, 200 ft. N, 215 ft. E, SW cor. NE SW, Sec. 35-8-13 ..... S.D.; W.O. 2,405 ft.

Southland Drlg. Co.'s No. 1 Frost Lbr. Co., 330 ft. N and W, SE cor. NE NE, Sec. 13-9-11. ..... S.D. 1,905 ft.

H. B. Stacey et al's No. 1 Hefkobita, 457 ft. N, 583 ft. E. SW cor. SE, Sec. 34-8-13 ..... Drlg. 2,508 ft.

Supreme Oil Co.'s No. 1 Pruitt, 330 ft. N and E, SW cor. SE SW, Sec. 36-8-11 ..... S.D. 2,226 ft.

B. E. Taylor's No. 1 Gay, 232 ft. S, 476 ft. E, NW cor. SE SW, Sec. 36-8-13 ..... Location abd.

B. E. Taylor's No. 1 Wooley, 330 ft. N and E, SW cor. SE SW, Sec. 36-8-13 ..... Location abd.

A. F. Tarver's No. 3 Cutrer, Sec. 12-7-11, 1,120 ft. E, 300 ft. N, SW cor. NW. ..... W.O.S.R. 2,600 ft.

Thornton et al's No. 2 S. S. Martinez, 312 ft. E, 205 ft. S, NW cor. SE NE, Sec. 4-7-13 ..... Location.

A. A. Trammell's No. 1 Sepulbedo, 330 ft. N and W, SE cor. NW NE, Sec. 5-7-13 ..... Derrick abd.

Triangle Drlg. Co.'s No. 1 La.-Long Leaf Lbr. Co., 330 ft. N and W, SE cor. Sec. 11-8-11 ..... S.D. 4,013 ft.

Tuffree et al's No. 1 T. L. Andries, N½ NE SE, Sec. 16-7-11 ..... S.D. 100 ft.

W. M. Ungerman's No. 1 F. Cross, 53 ft. S, 146 ft. W, NE cor. SW SE, Sec. 25-8-11. ..... Moving in rig.

TENSAS PARISH

H. V. Schumacker's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12. ..... S.D. 3,645 ft.

UNION PARISH

E. S. Goens et al's No. 1 Frost Lbr. Co., 330 ft. S and E, NW cor., Sec. 17-22-2e. ..... Location.

Wong Hing, tr.'s No. 1 Union Sawmill Co., 712 ft. W, 246 ft. N, SE cor., Sec. 15-22-1e. ..... Derrick.

VERNON PARISH

Earl Jones' No. 1 Willis, 350 ft. N, 400 ft. E, SW cor. SE SE, Sec. 32-3n-9w. ..... Derrick.

Llano Co-operative Colony's No. 1 fee, NW NE, Sec. 34-3n-9w ..... Drlg. 2,139 ft.

WEBSTER PARISH

George Pearce et al's No. 1 Ambrose, 200 ft. N and W, SE cor. SW SE, Sec. 22-20-10 ..... Drlg. 2,248 ft.

WEST CARROLL PARISH

Mamie S. McCurry's No. 1 Richard & Donnaw, 300 ft. N and E, SW cor., Sec. 13-19-9e. ..... Location.

WINN PARISH

P.V.T. Oil Co.'s No. 1 Southern Paper Co., 150 ft. S and W, NE cor. SW, Sec. 28-13-3 ..... Drlg. 1,050 ft.

Arkansas

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-3 ..... S.D. 1,253 ft.

CLEBURNE COUNTY

Frank S. Craver et al's No. 2 Doniphan Lbr. Co., 700 ft. N, 200 ft. E, SW cor. SW, Sec. 34-11-9 ..... Drlg. 730 ft.

COLUMBIA COUNTY

Kendall Oil Co.'s No. 1 Fullenweider, 300 ft. S and E, NW cor. NE NE, Sec. 13-17-22. ..... S.D. 2,175 ft.

DREW COUNTY

Co-Operative Dev. Co.'s No. 1 Ogles, Sec. 35-15-5, 330 ft. S and E, NW cor. NE NW. ..... Coring 3,311 ft.

HOT SPRINGS COUNTY

Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16. ..... S.D. 1,840 ft.

LAFAYETTE COUNTY

Fox & Langford's No. 1 Coleman Bros., 330 ft. S and E, NW cor. SE SE, Sec. 25-16-25. ..... Derrick.

Sam E. Wilson, Jr., No. 1 Smith, 330 ft. N and E, SW cor. NW SE, Sec. 24-19-25. ..... Derrick pattern.

LINCOLN COUNTY

Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 200 ft. W, NE cor. NE SW, Sec. 5-8-7. ..... S.D. 3,250 ft.

LITTLE RIVER COUNTY

American Portland Cement Co.'s No. 1 fee, 150 ft. S and E, NW cor. SW NE, Sec. 21-12-32. ..... Derrick.

Harrell et al's No. 1 Taffee, 32 ft. W, 630 ft. E, 330 ft. S, SW cor. W NW, Sec. 25-12s-32w ..... Coring 2,972 ft.

MILLER COUNTY

Duluth-Ark. Oil Co.'s No. 1 Stone, SE cor. SW, Sec. 32-14-26 ..... Plugged back to 2,300 ft; T.D. 1,535 ft.

Goodwin et al's No. 1 E. A. McCowan, NW cor. NW SE, Sec. 22-15-28 ..... Rigging up.

Fitzwater et al's No. 1 C. J. Norsen, SW cor. SE SW, Sec. 20-15-27 ..... S.D. 121 ft.

Fitzwater et al's No. 1 Beck, Sec. 32-15-26 ..... Resetting 4½-in.; T.D. 2,954 ft.

Fitzwater et al's No. 2 Beck, 150 ft. N and E, SW cor. SW SE, Sec. 32-15-26. ..... Derrick.

Fitzwater et al's No. 1 Fouke, 150 ft. S and W, NE cor., Sec. 11-17-27 ..... S.D. 105 ft.

Wm. S. King's No. 1 Beck, 330 ft. S and E, NW cor. NE NW, Sec. 35-15-26. ..... Rigging up.

Chas. B. Lenz's No. 1 Dean, 125 ft. E, 200 ft. S, NW cor. SE Sec. 19-15s-25w. ..... Derrick.

W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27. ..... S.D; W.O. 2,600 ft.

OUACHITA COUNTY

McLean et al's No. 1 L. D. Neely, Sec. 23-15-16, 200 ft. N and W, SE cor. NE SW. ..... S.D. 150 ft.

Chas. Steele et al's No. 1 Anderson, 155 ft. S, 150 ft. E, from center Section 36-12-18 ..... S.D. 525 ft.

PIKE COUNTY

H. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24. ..... S.D.; W.O. 1,020 ft.

H. R. Henderson's No. 1 W. B. East, 200 ft. S, 150 ft. W, NE cor., Sec. 13-9-23. ..... S.D.; rig.

PRAIRIE COUNTY

Powell Creek O. & G. Co.'s No. 1 Kloss, NE SW, Sec. 3-4n-4w ..... Partly rigged up and S.D

ST. FRANCIS COUNTY

H. R. Henderson's No. 1 Britton, Sec. 1-4-1e, 1,000 ft. S and E NW cor. NE NW ..... Drlg. 3,350 ft.

UNION COUNTY

Cox et al's No. 1 Goodwin, 360 ft. S, 180 ft. W, NE cor. SW SW, Sec. 3-16-16 ..... S.D. 140 ft.

H. H. Helms' No. 1 C. H. Murphy, NE cor. NW NE, Sec. 31-16-14 ..... Skidded over; rigging up on new hole.

Wilson & Chapman's No. 1 King, Sec. 3-18-13, 330 ft. N and E, SW cor. NE NE ..... Derrick.

Wilson & Chapman's No. 1-A D. Norman, 330 ft. S and E, NW cor. N½ NE SE, Sec. 3-18-13 ..... S.D. 1,673 ft.

WASHINGTON COUNTY
(Cable tools)

A. B. Chase and Ed Rogers' No. 1 Cunningham, 125 ft. S, 300 ft. W, NE cor. SW NE, Sec. 14-15-33 ..... S.D. 1 750 ft.

East Texas

BOWIE COUNTY

Logan & Elliott's No. 1 Smith, 9,600 ft. S, 2,500 ft. W, NE cor. Chas. Lewis Sur. ..... S.D. 4,595 ft.
Lanford et al's No. 1 W. W. Whybark, 200 ft. S, 200 ft. W, SW cor. J. H. Dyer Sur. ..... S.D. 1,792 ft.

CASS COUNTY

Davis & Pigg's No. 1 Roy Bryan, SW cor. Roy Bryan 85-ac. tr., Albert H. Lattimer Sur. ..... S.D. 2,860 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... S.D. 4,390 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. ... S.D. 2,280 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 960 ft.

HARRISON COUNTY

M. E. Nash et al's No. 1 Henderson, G. L. Bledsoe Sur. .. S.D. 85 ft.
Ryan Cons. Pet. Corp.'s No. 1 J. M. Fuhr, 1,300 ft. N of NW cor. T. J. Copelin Sur., 1,675 ft. SW at right angles to NW SE line of O'Neal Sur. ..... Coring 4,185 ft.
Triangle Drlg. Co.'s No. 1 Platt, 1,125 ft. W, 1,995 ft. N, SE cor. F. C. Barker Sur. ..... Location.

MARION COUNTY

Saunoch Dev. Co.'s No. 1 Miller, 725 ft. N, 1,470 ft. E. SW cor. H. Fulgram Sur. (was Gist, Claunch & Dodson) ..... Reaming 4,820 ft.
Geo. Hindeman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. ..... S.D. 2,380 ft.
Purcell et al's No. 1 Coker, M. Reed Sur. ..... S.D. 1,957 ft.
Starling & Preston's No. 1 Henderson, R. Bennington Sur. H. R. S. ..... S.D. 70 ft.

PANOLA COUNTY

Root-Skinner's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 160-ac. tr., SW cor. Isabel Hanks Sur. .. S.D. for D.S. 740 ft.
J. L. Nelson et al's No. 1 J. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in James Hanks Sur. ..... S.D. 3,055 ft.

SHELBY COUNTY

E. H. Francis' No. 1 John Mims, Mary Smith Sur. .. Coring 2,830 ft.
General Minerals Co.'s No. 2 Pickering Lbr. Co., 600 ft. N, 400 ft. E, SW cor. D. S. Height Sur. ..... Drlg. 2,670 ft.
Oil News' No. 1 Pickering, C. H. Patterson Sur. ..... S.D. 3,300 ft; contract depth.
Henry Mauiding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 20-ac. tr., A. D. Fountain Sur. ..... Rigged up and S.D.
Prairie Creek Crude Co.'s No. 1 Ellington, 150 ft. N and 200 ft. W from SE cor. 42-a. tr. of J. Burleson Sur. .. Arranging to test 2,822 ft.
Ridgeway et al's No. 1 Polley, Dominguez Gonzales Sur., 3,180 ft. E of SW cor., 160 ft. N at right angles of Polley 457-ac. tr. ..... Drlg. 2,882 ft.
Sedberry et al's No. 1 Pickering Lbr. Co., 600 ft. N, 400 ft. E, SW cor. Jane Stoddard Sur. ..... S.D. 2,275 ft.
Western World's No. 1 Foster, Billingsby-Jeremiah Bowlin Sur. ..... S.D. 2,940 ft.
Wray & Dunbar's No. 1 C. A. Hayden, 600 ft. N and W SE cor. 153-ac. tr. in D. T. F. Yordt Sur. ..... S.D. for wtr. 2,280 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

CADDO—RODESSA AREA

Company, well, farm name, section and block—	Remarks:
Ark.-La. P. L. Co.'s No. 1 F. E. Gloyd, 660 ft. E, 100 ft. S, NW cor. NW NE, Sec. 34-23-16	S.D. 210 ft.

CADDO—BETHANY AREA

Calatex O. & G. Co.'s No. 1 Mrs. E. Augurs, 3,567 ft. N, 2,600 ft. E, SW cor., Sec. 19-16-16	Derrick.
Calatex O. & G. Co.'s No. 1 J. M. Agure, 2,000 ft. N, 800 ft. E, SW cor., Sec. 9-16-16	Drlg. 1,500 ft.

CADDO PARISH

Louana Oil & Gas Co.'s No. 1 Cushman, 1,380 ft. N, 600 ft. E, SW cor., Sec. 33-19-16	T.A. 2,800 ft.

CLAIBORNE PARISH

Triangle Drlg. Co.'s No. 1 Brown, 1,542 ft. N, 1,900 ft. W, SE cor. NE, Sec. 1-19-6	Shooting formation 4,490 ft.

SABINE PARISH—ZWOLLE

Abbott & Rankin's No. 1 Nulton, 330 ft. S and E, NW cor. SE NE, Sec. 2-7-13	W.O.S.R. 2,397 ft.
Jule Alford's No. 1 Stoker, 212 ft. N and W, SE cor. NE SW, Sec. 10-7-11	S.D. 600 ft.
J. O. Andree's No. 1 Sabine Lbr. Co., 230 ft. S and E, NW cor. SW NW, Sec. 11-7-12	S.D. 2,569 ft.
J. H. Askew's No. 2 Henderson, 420 ft. S, 190 ft. W, NE cor. SW SE, Sec. 31-8-10	Derrick.
J. H. Askew's No. 2-E McNeely 65 ft. S, 100 ft. W, NE cor. SE NE, Sec. 14-7-11	Set 10-in. 41 ft; drlg. 3,380 ft.
J. H. Askew's No. 1-E McNeely, 220 ft. S, 260 ft. W, NE cor. SE NE, Sec. 14-7-11	T.A. 2,632 ft.
J. H. Askew's No. 1 Lyons, 330 ft. W, 252 ft. N, SE cor. SE NE, Sec. 31-8-10	Drlg. 2,712 ft.
Baird Bros.' No. 3 Martinez, 1,012 ft. S, 907 ft. E, NW cor. NW SW, Sec. 2-7-13	Set 10-in. 42 ft.
Baird, Stone & McFaddin's No. 1 Duggan, 150 ft. S and W, NE cor. SE, Sec. 14-7-11	Location.
Cameron Oil Co.'s No. 1 G. Martinez, 845 ft. E, 540 ft. N, SW cor., Sec. 2-7-13	Rigging up.
Capitol-Crescent Oil Co.'s No. 1 Sabine State Bank, 990 ft. E, 838 ft. N, SW cor. NW SW, Sec. 2-7-13	Derrick.
Cotton Pet. Co.'s No. 4 S. S. Martinez, 97 ft. S, 215 ft. W, NE cor., NE SE, Sec. 3-7-13	S.D. 2,519 ft.
Continental Drlg. Co.'s No. 1 Leone est., 70 ft. N, 200 ft. W, SE cor., Sec. 31-8-12	Derrick.
Dengail O. & G. Co.'s No. 1-F Nulton, 330 ft. S and E, NW cor. SW NW, Sec. 2-7-13	W.O.S.R. 2,501 ft.
Dengail O. & G. Co.'s No. 2-G Nulton, 330 ft. N and E, SW cor. NE NE, Sec. 3-7-13	S.D; W.O. 2,475 ft.
Edwards & Hubier's No. 1 G. Martinez, 510 ft. S, 280 ft. E, NW cor. SW SW, Sec. 2-7-13	Derrick.
J. E. Grandstaff's No. 1 Johnson, 8½ SW SW, Sec. 2-7-11	W.O.S.R. 2,592 ft.
J. J. Hall's No. 4 Jacobs, 175 ft. W, 300 ft. N, SE cor. Sec. 1-7-11	S.D. 2,710 ft.
D. D. Holcomb's No. 2 Quayhaglew, 149 ft. N, 200 ft. E SW cor. SE SE, Sec. 11-7-11	Arranging to deepen 2,606 ft.
Imperial Producers Co.'s No. 1 Leone Est., 1,334 ft. S, 660 ft. E, NW cor., Sec. 32-8-12	Location.
H. M. Jones' No. 1 Raines, 300 ft. S, 150 ft. W, NE cor. NW NW, Sec. 14-7-11	S.D. 2,396 ft. (corrected).
H. T. Kilgore's No. 1 Pate, 330 ft. N and W, SE cor. NE NE, Sec. 32-8-11	Dry and abd. 2,704 ft.
Lanier et al's No. 2 Steinhorst, 150 ft. S and W, NE cor. SE NW, Sec. 3-7-13	W.O.S.R. 2,450 ft.
Lee & Burnett's No. 1 Travis, 510 ft. S, 150 ft. E, NW cor. NE NW, Sec. 13-7-11	Set 10-in. 40 ft; fishing 1,400 ft.
Lion Oil Ref. Co.'s No. 2 LaRoux, 384 ft. S and W, NE cor. SW SE, Sec. 5-7-13	Location.
Lyons & Neely's No. 2 Clanon, SE cor. SE NW, Sec. 14-7-11	Set 6-in. 2,455 ft.
Loring Oil Co.'s No. 21 Bowman-Hicks, 450 ft. S, 275 ft. E, NW cor. SW NW, Sec. 16-7-12	Drlg. 2,890 ft.
Magnolia Pet. Co.'s No. 2 Williams, 240 ft. S, 261 ft. E, NW cor. NW NE, Sec. 6-7-10	W.O.S.R. 2,653 ft.
H. D. McDonald's No. 1 T. L. Andrin, 180 ft. E, 150 ft. N, SW cor. NW SE, Sec. 15-7-11	Derrick.
L. M. McGuffin's No. 1 Chadick, 300 ft. N, 275 ft. E, SW cor. NE SE, Sec. 31-8-10	Set 10-in. 42 ft.
Frank Meiat's No. 1 Davis, 175 ft. W, 325 ft. S, NE cor., Sec. 2-7-11	Washing to bottom 2,552 ft.
Ben Merritt, trustee's No. 1 Chadick, SW cor. SW NE, Sec. 31-8-10	Drlg. 200 ft.
E. F. Neely's No. 2 Ponder, SW cor. SE SE, Sec. 9-7-11	Comp. flowing 125 bbls. 2,490 ft.
Pelican Nat. Gas Co.'s No. 16 La. Long Leaf Lbr. Co., 86 ft. S, 544 ft. W, NE cor. NW NE, Sec. 10-7-11	Drlg. 2,565 ft.
Pelican Nat. Gas Co.'s No. 9 Sabine Lbr. Co., 200 ft. N and E, SW cor. NE SW, Sec. 3-7-13	Set 6-in. 2,036 ft.
T. L. Phillips et al's No. 1 Haley, 330 ft. S and E, NW cor. NW SE, Sec. 6-7-12	Derrick.
H. C. Pitts et al's No. 1 Trammell, 1,037 ft. S, 150 ft. E, NW cor. NE NE, Sec. 5-7-11	Location.
Ritchie Prod. Co.'s No. 1 Byrd, 503 ft. N, 399 ft. W, SE cor. NE NW, Sec. 1-7-11	Bailing 2,465 ft.
O. J. Rowe's No. 2 Williams, 170 ft. N, 200 ft. E, SW cor. SW NW, Sec. 13-7-11	Comp. flowing 3,000 bbls. 2,600 ft.
Sabine Prod. Co.'s No. 3 Pearce, Sec. 10-7-11, 330 ft. S and E, NW cor. SE NW	S.D.; W.O. 2,699 ft.
Sabine Prod. Co.'s No. 3 Sabine Lbr. Co., SW cor. NW SE, Sec. 3-7-13	Rigging up.
Skidmore Oil Co.'s No. 2 G. Martinez, 330 ft. S and W, NE cor. SE SE, Sec. 3-7-13	Derrick.
Scully & Beach's No. 3 Lafitte, 1,030 ft. S, 134 ft. E, NW cor., Sec. 13-7-11	Rigging up.
Ben F. Smith's No. 2 Turner, 250 ft. N, 450 ft. E, SW cor. NW NW, Sec. 4-7-11	Dry and abd. 2,610 ft.
F. E. Stancil's No. 1 Pouder, 273 ft. S, 397 ft. E, NW cor. NE SE, Sec. 10-7-11	S.D. 2,593 ft.
State Prod. Co.'s No. 1 Keazele, 150 ft. N and W, SE cor. NW SW, Sec. 2-7-13	S.D.; W.O. 2,427 ft.
State Prod. Co.'s No. 1 Liles, 150 ft. S and W, NE cor. SE SW, Sec. 28-8-11	Derrick.
State Prod. Co.'s No. 1 Sabine Lbr. Co., 365 ft. N, 100 ft. W SE cor. NW SW Sec. 3-7-13	S.D. 2,427 ft.
H. H. Stout et al's No. 1 Byrd, 150 ft. N and E, SW cor. NW NW, Sec. 1-7-11	Coring 2,314 ft.
The Coming Oil Co.'s No. 1 Williams, 130 ft. N, 50 ft. E, SW cor. SE SW, Sec. 31-8-10	S.D. for cag. 2,368 ft.
C. H. Tuttle's No. 3 Byrd, 700 ft. E, 510 ft. S, NW cor., Sec. 7-7-10	W.O.S.R. 2,727 ft.
B. R. White et al's No. 1 Stille, 620 ft. W, 205 ft. N, SE cor. NE SW, Sec. 35-8-13	Location.
J. P. White's No. 1 Nulton, 330 ft. N and E, SW cor. NE NW, Sec. 1-7-13	S.D. 2,455 ft.
George Woulf's No. 1 Nulton, 330 ft. S, 330 ft. E, NW cor. SW NE, Sec. 3-7-13	W.O.S.R. 2,430 ft.

UNION PARISH

Southern Carbon Co.'s No. 61 fee, 2,210 ft. N, 660 ft. E, SW cor. SE, Sec. 17-20-4e	Comp. 5,000,000 ft. gas 2,155 ft.
G. H. McHenry, tr.'s No. 1 Potts, 2,044 ft. N, 394 ft. W, SE cor. NE, Sec. 15-21-3e	Derrick pattern.
Southern Carbon Co.'s No. 62 fee, 1,920 ft. S and W, NE cor. NW, Sec. 30-20-4e	Location.

Arkansas

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. S½ NW, Sec. 11-18-13	T.A. 3,586 ft.
Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13	Location.
Wilson & Chapman's No. 1-B Hadley, Sec. 3-18-13, 330 ft. S and W, NE cor. SE NW	T.A. 3,545 ft.
Wilson & Chapman's No. 2 Emily King, Sec. 3-18-13, 150 ft. S, 150 ft. E, NW cor. NE NE	S.D. 1,730 ft.

East Texas

PANOLA COUNTY

Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur.	S.D. 2,359 ft.
United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur.	Location abd.

Mississippi

HINDS COUNTY

Jackson O. & G. Co.'s No. 4 Mayes, 1,400 ft. E, 211 ft. S, NW cor., Sec. 1-5n-1e	Drlg. plug 2,280 ft.

RANKIN COUNTY

Love Pet. Co.'s No. 1 Hatfield, Sec. 6-5n-2e	Drlg. 2,170 ft.
J. A. Matson et al's No. 1 Warner, 1,100 ft. S, 200 ft. W, NE cor. W½ SE, Sec. 14-5n-1e	Derrick.

Wildcat Operations in Mississippi

AMITE COUNTY

Company, well, farm name, section and block—	Remarks:
Magnolia State O. & G. Co.'s No. 1 Anderson, C NE NW, Sec. 14-3n-3e	Drlg. 250 ft.

CLARKE COUNTY

F. X. Gowans et al's No. 1 Elfring, SE NE, Sec. 13-1n-14e.	S.D. 104 ft.

HINDS COUNTY

Love & Lancaster's No. 1 Elton Plantation, C SE, Sec. 17-4n-1e	Drlg. 1,900 ft.

LAMAR COUNTY

Chas. W. Gorr et al's No. 1 Jordan, NW C of SW, Sec. 1-2n-15w	Location.
Stauffer & Kourl's No. 1 Bond, SE NE, Sec. 18-2n-14w	Testing 3,011 ft.

LOWNDES COUNTY

Lowndes County Oil & Dev. Co.'s No. 1 Carr est., Sec. 34-17-16e, 1,320 ft. E, 330 ft. S, NW cor. Sec.	S.D. 2,200 ft.

MONROE COUNTY

P. J. McAlpine's No. 1 Rye, Sec. 22-15s-17w	S.D. 1,777 ft.

NEWTON COUNTY

Bob Dalton's No. 1 Majure, 400 ft. N, 300 ft. E, SW cor. SE, Sec. 25-6n-11e	S.D. 1,650 ft.

RANKIN COUNTY

Home Oil Prod. Corp.'s No. 1 So. Jackson Land Co., 85 ft. S, 130 ft. W, NE cor. NW NW, Sec. 23-5n-1e	Drlg. 2,430 ft.
Love Pet. Co.'s No. 2 Int. Lbr. Co., 450 ft. S and E, NW cor., Sec. 28-6n-2e	T.A. 2,657 ft.
Majestic O. & G. Co.'s No. 1 Elton Lbr. Co., Sec. 10-4n-3e	Derrick.

SCOTT COUNTY

M. U. Culley et al's No. 1 Owens, Sec. 2-8-9	S.D. 750 ft.

Wildcat Operations in Alabama

LAMAR COUNTY
(Cable tools)

Company, well, farm name, section and block—	Remarks:
DeSoto O. & G. Corp.'s No. 1 Gardner, NW NW, Sec. 32-15s-16w	Drlg. 3,194 ft.

MOBILE COUNTY

J. C. Prine et al's No. 1 M.&O.R.R., Sec. 33-3n-4w	Drlg. 3,218 ft.

WASHINGTON COUNTY

South Alabama O. & G. Co.'s No. 1 Wilson, Sec. 26-7n-1w.	Drlg. 1,303 ft.

PERSONAL PARAGRAPHS

L. L. Hutchison, geologist and operator of Tulsa, is home from a short stay in Chicago.

* * *

Frank R. Bryan, vice president of Bryan Petroleum Company of Tulsa, has returned from a two months' stay in East Texas.

* * *

George J. Walton, district manager, Emsco Derrick & Equipment Company, Dallas, Tex., was in Tulsa on a short business trip last week.

* * *

Leo Ranney, president, the Water Mining Corporation, Tulsa, has just returned from a business trip to Omaha, Neb., in the interests of his company.

* * *

E. M. Carter, hydrologer and mining engineer, Tulsa, is engaged in developing a water supply for the Indian Hills Country Club near Catoosa, Okla.

* * *

Jack Decker, Mid-Continent drilling contractor, stopped off at Wenatchee, Wash., to visit friends while en route to the Aberdeen Field.

* * *

Mr. and Mrs. E. C. Wagner visited relatives in Casper, Wyo., recently. Mr. Wagner is in the pipe line department of the Producers & Refiners Corporation.

* * *

Wesley F. Wright, manager of the Lone Star Gas Company, Fort Worth, Tex., division, was recently elected a director of the Chamber of Commerce of that city.

* * *

John Marston, district land man for the Atlantic Oil Producing Company, San Angelo, Tex., and family, are spending a vacation in Shreveport, La., their former home.

* * *

W. T. Nightingale, geologist for the Ohio Oil Company and Mountain Fuel Supply Company, with headquarters in Rock Springs, Wyo., visited his companies' Casper, Wyo., offices last week.

* * *

Maurice Newton of Hallgarten & Company, has been elected a director of the Mid-Continent Petroleum Corporation, succeeding the late Casimir I. Stralem, also of Hallgarten & Company.

* * *

Hyman Ledeen, western manager for the Falk Corporation, Los Angeles, Calif., has been spending considerable time in the East Texas oil fields and in Tulsa recently working on company business.

* * *

Ray K. Hart, a former attorney for Prairie Oil & Gas Company at Independence, Kans., has been added to the legal department of Sinclair Prairie Oil Company, headed by Judge Edward H. Chandler.

* * *

Dr. Lazar Edeleanu, prominent Rumanian petroleum chemist, was presented with the Redwood medal, the highest award of the Institution of Petroleum Technologists, at a special meeting of the institution in London on October 7. Following the presentation, Doctor Edeleanu delivered an address on "The History of the Edeleanu Process." Doctor Edeleanu is the first recipient of the Redwood medal under the institution's new rules, whereby it may be conferred on any petroleum technologist, regardless of nationality or affiliation with the institution.

* * *

Walter C. Teagle, president of the Standard Oil Company (New Jersey) has been nominated as a director of the Federal Reserve Bank of New York, to succeed Theodore F. Whitmarsh, chairman of Francis H. Liggett & Company. The nomination, which is tantamount to election, was made by the New York State Bankers' Association. Mr. Teagle will take office January 1, 1933. Mr. Teagle holds many financial posts as director and at present is serving on the banking and industrial committee of the Second Federal Reserve District and as national chairman of the co-ordination committee of the Share the Work Movement for the United States.

J. G. Swartz, an oil jobber of Cleveland, Ohio, spent several days in Tulsa last week.

* * *

William K. Whiteford, vice president, Barnsdall Oil Company, Tulsa, is on a business trip to California.

* * *

P. McDonald Biddison will discuss "Hazards Encountered in the Transmission and Distribution of Natural Gas" at the October meeting of the Dallas Accident Prevention Association, October 13.

* * *

A. W. Breeland, safety director of the Lone Star Gas Company, Dallas, Tex., attended the National Safety Congress in Washington, D. C., following a two weeks' vacation spent in visiting points of interest in the East.

Men of the Industry

E. B. EMENHISER

The farm, the bank and accountancy provided the pathway along which E. B. Emenhiser, secretary and assistant treasurer of the Indian Territory Illuminating Oil Company, Bartlesville, Okla., entered the oil business. Mr. Emenhiser was born on a farm near Tonkawa, Okla., attended school and a business college in that town, and at the age of 18, when the Kiowa-Comanche reservation in southern Oklahoma was opened for settlement, acquired a farm near Frederick, as did his father. The young man later left the farm to take a position in a bank in Frederick. This work led to his appointment as deputy treasurer of Tillman County. Then he was elected treasurer for two consecutive terms.

Following this service in public office Mr. Emenhiser was a deputy auditor in the office of the state examiner and inspector, resigning to enter public accounting work in Oklahoma City with the firm of Hammonds, Nash & Parkinson. Prior to this he had passed the necessary examination and had been made a certified public accountant. In 1922 he joined the Indian Territory Illuminating Oil Company organization as auditor and three years later was advanced to assistant secretary-treasurer. In 1926 he was made secretary and assistant treasurer.

Mr. Emenhiser is active in the Kiwanis Club of Bartlesville and early in 1932 was made its president. He plays golf on the Hillcrest course, Bartlesville.

Edward L. Shea, executive vice president of the Tide Water Oil Sales Corporation, rejoices over the recent birth of a son.

* * *

Frank Pryor, president of the Stanolind Oil & Gas Company, Tulsa, and F. J. Keleher, treasurer, made a business visit to Casper, Wyo., recently.

* * *

Capt. John F. Lucey of Dallas, has been made president of the Federal Home Loan Bank for the ninth district, and situated at Little Rock, Ark.

* * *

H. T. McDonald, assistant chief engineer for the Caterpillar Tractor Corporation, Peoria, Ill., has been making a tour of inspection of the East Texas and Mid-Continent fields.

* * *

F. L. Templeton, who has been warehouseman for the Shell Petroleum Corporation in the Avant, Okla., district for the past 16 years, is retiring and moving to his new home in Neosho, Mo.

* * *

R. R. Burke of Gallup, N. Mex., with the Reserve Oil Company, was a visitor in Casper, Wyo., recently, conferring with officials of the mineral leasing division, United States Geological Survey.

* * *

E. J. McCurdy, Jr., independent operator and consulting geologist of Fort Worth, Tex., has been confined to the Methodist Hospital in that city, from an infection caused by an abrasion on his face.

* * *

Mr. and Mrs. Ed Dennis and daughter have returned to Petrolia, Ontario, from Negritos, Peru, where Mr. Dennis has been for the past five years on the International Petroleum Company staff. Mr Dennis expects to remain in Canada.

* * *

George W. Schneider of The Texas Company, has been elected president of the Shreveport Geological Society; Sidney Mix, Gulf Refining Company, was chosen vice president, and D. N. Jolly, consulting geologist and formerly with the Federal Petroleum Company, secretary and treasurer. The retiring officers were W. F. Chisholm, president, G. W. Schneider, vice president, and Dugald Gordon, secretary and treasurer.

* * *

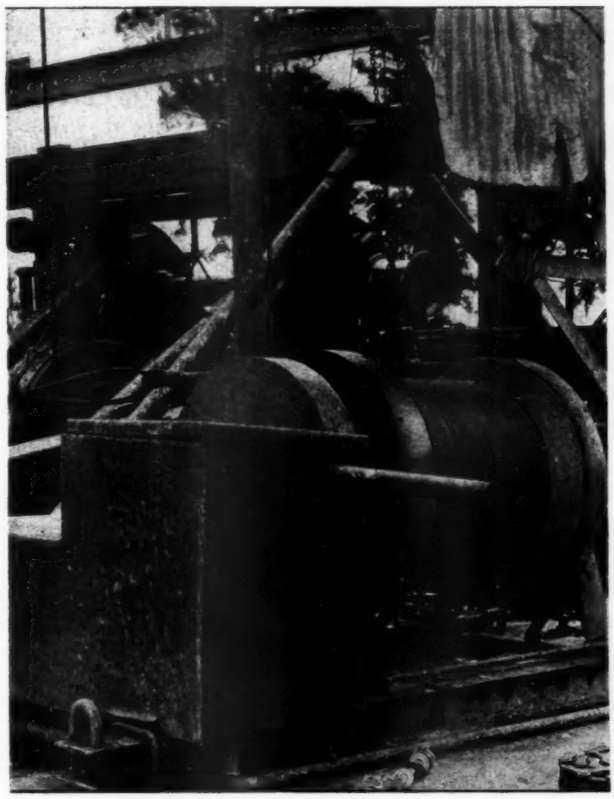
John M. Vetter, chief geologist of the Rio Bravo Oil Company, has been elected president of the Houston Geological Society. He succeeds A. G. Wolf of the Texas Gulf Sulphur Company. Other new officers elected include S. A. Judson, Texas Gulf Producing Company, vice president, and John C. Miller, The Texas Company, secretary-treasurer. John F. Weinszierl, consulting geophysicist and geologist, is the retiring secretary-treasurer.

* * *

A. Beeby Thompson, O.B.E., prominent British engineer and consultant, has been decorated by King Fuad of Egypt with the Order of the Nile, third class (commander). The award was in recognition of Mr. Thompson's long service to the Egyptian government in connection with petroleum affairs, particularly in exploratory work in the Red Sea oil fields. Mr. Thompson has been associated with the Egyptian government in an advisory capacity for the past 20 years.

* * *

R. H. Lynn, of the Phillips Petroleum Company, Amarillo, Tex., has been named chairman of the Panhandle district curtailment committee. Members chosen for that committee by Mr. Lynn are: John Sheerin, Shamrock Oil & Gas Company; W. L. Kingsland, independent; Edgar Bissett, Skelly Oil Company; Ed Warren, Continental Oil Company; Ed Dunnigan, independent; J. L. McGrew, Magnolia Petroleum Company; A. C. Smith, The Texas Company; B. C. Low, Humble Oil & Refining Company; Clyde Shields, Sinclair Prairie Oil Company; H. F. Alspaugh, Dixon Creek Oil Company; and A. R. Anderson, Mel Davis, Ed Daly, Oi Lerrman and F. E. Smith, independent operators.



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NATURAL GAS DEVELOPMENTS

Ohio Utilities Commission Increases Columbus Rate

COLUMBUS, Ohio, Oct. 10.—One of the most important rate cases before public service commissions was decided when the Ohio Utilities Commission approved a gas rate of 55 cents per 1,000 feet for the city of Columbus, as against a present rate of 48 cents per 1,000 feet.

This case has been before the commission for more than two years and is considered the most important gas rate controversy in the history of the commission.

The decision was by a vote of 2 to 1, with Commissioners E. J. Hopple of Cleveland, chairman, and Frank W. Geiger of Springfield signing the majority report, while John W. Bricker returned a minority report which set a rate of approximately 48 cents.

It was intimated that some of the allowances made in the majority report will be contested and the case will probably be taken to the Ohio Supreme Court. The majority report granted certain allowances on depreciation, delayed rentals on reserve acreage and working capital and also allowed the gas companies to charge as an expense the cost of fighting the rate case.

Pending further developments in the decision of the case the present rate of 48 cents per 1,000 feet will continue.

Three subsidiaries of the Columbia Gas & Electric Corp. were involved in the commission's action, the Columbia Gas & Fuel Co., the United Fuel Gas Co. and the Ohio Fuel Gas Co.

Keith Clevenger Resigns from American Gas Ass'n.

Keith Clevenger, for the past three years director of publicity and advertising for the American Gas Association, New York City, has resigned, according to an announcement made by Alexander Forward, managing director of the association.

Mr. Clevenger will enter the field of gas merchandising and advertising promotion. In his new capacity he will be associated with the advertising firm of Wilson & Haight, Inc., of Hartford, Conn., as a planning, merchandising and advertising consultant, primarily in the promotion of the modern automatic all-gas kitchen merchandising and advertising program for gas utilities, as well as a general consultant on all matters pertaining to gas utility and merchandising matters.

Prior to joining the staff of the American Gas Association, in 1929, Mr. Clevenger had been identified with the Henry L. Doherty organization as director of public relations for their oil and gas properties in the Southwest, as well as other gas, electric and telephone utilities affiliations.

TEXAS RATE HEARING

WICHITA FALLS, Tex., Oct. 10.—Dates for a hearing to determine what rate should be charged by the Lone Star Gas Co. for delivering gas to the various municipalities it serves in Texas will be announced in the near future, as soon as a similar hearing now under way in Oklahoma City is completed, according to a letter received by City Manager V. R. Smitham from the State Railroad Commission.

The letter stated that Wichita Falls would be invited to have representatives at the Texas hearing. Mr. Smitham explained that the setting of a fair gate rate was the first step toward obtaining lower gas rates in this city.

Rate and Tax Perils to the Gas Industry Seen By President R. W. Gallagher

By R. W. GALLAGHER
President, East Ohio Gas & Fuel Co., Cleveland, Ohio*

The gas industry, in a number of jurisdictions, has been made the target of those who for one reason or another (one might even suggest the possibility of making political capital as one reason) agitate for rate reductions and for burdensome legislation, state and national, based upon the idea that utility rates have not been reduced in proportion to other items in the cost of living or doing business. Such an agreement is easily answered; utility rates never were anything like so high proportionately as other expenses of living and doing business.

Some of our regulatory commissions have with clear vision recognized that such agitation is untimely and unnecessary. The operating utilities have through reduced earnings suffered such serious financial losses that further curtailments of revenues would only impair the public service. We may expect during the coming winter a greater increase in the number of proposed enactments by Congress and by the many state legislatures leveled at the public utility industry.

It is probable that there will be many suggestions for increases in our taxes, although to anyone familiar with the situation such proposals may seem incredible. Our taxes have mounted steadily. We now pay 10 cents out of every gross dollar we earn in taxes, national, state and local, and this in the face of the fact that we are highly competitive with every other form of fuel not one of which is relatively so highly taxed. We are made tax gatherers for government authorities who thus escape the odium of levying taxes.

The time has come for us to speak out boldly upon this issue. I am aware that in some instances our people have been told to keep quiet on this subject; that they will find their taxes still further increased if they advertise to their customers what part of the rate goes for taxes. However, we might as well die fighting, for in view of our competitive situation we will eventually be done for unless a stop is put to the strangling effect of utility taxation.

When we were in Washington last winter on the proposals to levy special taxes upon the utilities, a member of the Ways and Means Committee of Congress aptly said, "There is only one principle of taxation—how to pluck the most feathers with the least squawking." Ladies and gentlemen, if we do not squawk loudly and promptly and effectively we soon will not have the breath to make any noises at all.

From a selfish standpoint if none other, it is necessary to be alive and active to the new order of things so far as general business is concerned. In the past possibly we have been too busy with our immediate individual tasks to make the neighborhood problems any of our concern. Industry, business in general, has been too prone to allow others to do its thinking along social lines.

We should strive to bring about open partnership between industrial leadership and popular leadership with the hope that there will come a greater realization that nothing can be good for business and bad for society or bad for business and good for society. If this understanding could be brought into general acceptance, we would have little to fear from demagogs.

*From president's address before American Gas Association fourteenth annual convention, Atlantic City, N. J. October 10-12, 1932.

LAREDO RATE HEARING

LAREDO, Tex., Oct. 10.—The appeal of the Texas Border Gas Co. from a lowering of gas rates by the city of Laredo has been heard by Ernest O. Thompson, state railroad commissioner, and Laten Stanbury, director of gas utilities.

The city of Laredo adopted an ordinance last January lowering the domestic gas rate from 75 cents to 42 cents per 1,000 feet.

Chief Engineer Green of the United Gas System, testified as to inventories of properties of the gas system serving Laredo.

PENNSYLVANIA RATE MEETING

HARRISBURG, Pa., Oct. 10.—In an effort to settle amicably the 12-year-old rate complaint of Erie and nearby communities against the Pennsylvania Gas Co., the Public Service Commission has announced it will arrange a conference soon with representatives of the complainants and the company.

TAKE FIRST AID COURSE

Twenty-three Lone Star Gas Co. men have recently completed the Bureau of Mines first aid course held at the Empire Consolidated School at Empire City, Okla. Those who attended were: Cecil Cardwell, Mark Black, Gothie Capps, George Porch, Elisha Hendricks, Goodrich W. Lyon, Charles L. Howell, James B. Martin, William G. Glass, Joe Martin, Sam Armstrong, Cecil Turney, Earl Reid, Claire Sutherland, David Spain, Jess Luckett, Walter K. Elledge, Walter L. Welch, Noel Sizemore, James Haynes and Jenkins M. Scott, all of Duncan, Okla. Also A. B. Hemphill and James Ferguson of Dallas, Tex.

GUTHRIE FRANCHISE VOTED

The Guthrie, Okla., Gas Service Co., subsidiary of the Lone Star Gas Co. of Texas, has been voted a 25-year franchise to serve gas in Guthrie. The company has been operating without a franchise since its former franchise expired about three years ago. Since December, 1931, it has been operating in competition with the Western Service Corp., which secured a franchise in March of that year.

JERSEY CONSUMERS DOUBLED

According to an announcement by the New Jersey Public Utility Information Committee, the number of gas customers in New Jersey has more than doubled in the 20-year period from 1912 to 1932, increasing from 439,772 to 985,879.

Consumption of gas showed a gain of more than 200 per cent, the total in 1912 being 10,652,247,000 feet as against 31,740,153,000 feet in 1931. Miles of transmission mains has also doubled, the 1912 mileage being 3,859 compared with the total of 8,171 miles at the end of 1931.

Hugoton Hopes for Line to Carry Gas to St. Louis

HUGOTON, Kans., Oct. 10.—Before spring the Hugoton gas field is expected to supply natural gas for the pipe lines serving Iowa, Nebraska and Minnesota.

Because of the restrictive measures of Texas relative to natural gas consumption, the companies which have been using Amarillo gas will replace this supply with Hugoton gas. Drilling activities are expected to be resumed in the spring, with prospects good for more than 100 new wells.

Another pipe line is reported under engineering study at present. This is the projected McNabb line from the Hugoton Field to St. Louis. Negotiations have been under way several months for this pipe line and, according to reports here, the line will be built in 1933 and will be one of the largest in the Southwest.

Texas Court to Hear Test on Ban on Appliance Sale

AUSTIN, Tex., Oct. 10.—The appeal of the San Antonio Public Service Co. from a court order obtained by Attorney General James V. Allred restraining the utility from engaging in the merchandising of gas and electric appliances is on the fall term docket of the Civil Appeals Court for the Third District.

The company appealed from the decision of District Judge Charles A. Wheeler, upholding the State's contention that the utilities charter did not confer power upon it to engage in merchandising.

The suit contended that the company not only exceeded its powers but tended to set up a monopoly in the merchandising of appliances, because of the longer terms, lower prices as an incident to increasing consumption of gas or electricity, and the fact that the merchandising functions could be carried on without overhead in the same offices and by the same employes as those engaged in the primary work of the public utility, and that recoverable rates on utility services could be used to cover up losses in the merchandising end of the business.

Pending final outcome of this suit, first on the subject in Texas, the State has not sought injunctions to prevent other public utility firms from continuing in the sale of merchandise.

Lone Star Hearing Delayed By Oklahoma Commission

Over protest of attorneys for the Lone Star Gas Co., the Oklahoma Corporation Commission has postponed indefinitely hearing on application for reduction of gas rates in 26 communities in Oklahoma.

Chairman Paul Walker said engineers employed by the commission to appraise and audit the concern's properties and records had completed their direct testimony and that only redirect examination remained. E. S. Ratliff, commission attorney, was ill and unable to attend the hearing. The company was given permission to file financial statements as of June 30, 1932.

Attorneys for the Lone Star requested that their engineers be permitted to testify.

"We heard the Lone Star engineers in previous hearings so we told them to file their statements," Chairman Walker said. "If we would allow it, the case would drag on for several months."

The company, Mr. Walker said, now claims a reproduction value of its properties of $73,000,000. Heretofore, it had set the amount at $72,000,000. Commission auditors claimed a fair value was $53,000,000.

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TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

Naphthenic Acid Recovery From Refinery Alkali Wash

I would like to obtain a practical laboratory method for determining qualitatively and quantitatively naphthenic acid in caustic sludge from treatment of light oils from West Texas and Coastal crudes?—J. P. J.

Naphthenic acids may be recovered in the form of soaps from suitable distillates by washing the distillates with alkaline solutions. The usual source of these acids is the alkaline wash remaining after the acid-treated distillate has been neutralized with a weak solution of sodium hydroxide. This material consists of the sodium soaps of the naphthenic acids, from which the acids may be obtained by acidification. Higher yields are said to be obtained if the crude soaps are first salted out with common salt. Gurwitsch suggests the use of sulphur dioxide in place of sulphuric acid for neutralizing the soap solution.

It is difficult to obtain the product free from unsaponifiable matter, so several methods for concentration have been proposed; these include washing the soap solution with large quantities of naphtha, also the addition of calcium hydroxide to the acids and then to distill in the presence of steam.

The salts of the naphthenic acids are amorphous, those of the alkali metals resembling soft soaps; they are readily soluble in water with a high lathering tendency. Those of the alkaline earths are more nearly solid, very slightly soluble in water, insoluble in alcohol and petroleum ether. Solids may be produced with the introduction of the heavy metals.

Gurwitsch-Moore, Petroleum Technology, page 95, gives the method for separation of the naphthenic acids as follows: "The oil and the alkaline solution must be preliminarily heated to 60° to 70° C.; the alkali solution must not be too strong (1 per cent to 2 per cent NaOH); it must be very carefully shaken up with the oil, and it is also advantageous to dilute the oil to be treated with benzine (naphtha). The solution of naphthene soaps obtained after standing at 60° to 70° C., even when clear, contains more or less oil, which is held in solution by the soaps. The proportion of this inseparable oil varies with the nature of the distillate and according to the strength of the alkaline solution.

"The separation of the naphthenic soaps from the accompanying hydrocarbons is best carried out by the method of Spitz and Honig, which consists in mixing the soap solution with an equal volume of alcohol and agitating repeatedly with petroleum ether or light benzine (naphtha), by which the hydrocarbons have been extracted. The alcohol is diluted off, and the acids precipitated with diluted sulphuric acid and washed with a saturated solution of common salt or sulphate of soda."

The uses for naphthenic acids are shown by Gruse, Petroleum and Its Products, page 332, as follows: A wide range of uses for naphthenic has been suggested by Charitschkoff, including antiseptics, wood-preservatives and soaps and greases of various kinds. The making of low grade soaps and soluble oils, which may be used for preparing insecticide oils, wood oils, etc., seem to be the chief outlet for the acids recovered from Russian oils. Burtin proposes the copper salts in the preparation of antifouling paints for treatment of ship bottoms.

Multipliers for Making Volume Temperature Corrections

Is it not more accurate to make volume corrections by the use of the standard multipliers, as published in the Bureau of Standards Cir. No. 154, or the abridged table from Cir. I. C. 160, in place of the group coefficient of expansion?—S. R. C.

Discussing a similar question, one of my friends has submitted the following:

I desire to call attention to the last paragraph of your comment on the query about volume change with temperature in your column of the August 11 issue of The Oil and Gas Journal. In this paragraph you outline an approximate method of determining the multiplier which gives fairly accurate results, but which does not check with the multipliers of the abridged table except for a rather limited range of temperature. For example: If the question had used either 70° or 80° F. in place of 75° the approximate method of calculation which you use would be different from the multiplier in the abridged table by 0.0001.

The coefficient of expansion applies to the oil at 60° F. rather than to the observed temperature; consequently, for temperatures above 60°, multiplying the coefficient of expansion by the number of degrees and subtracting this from unity does not give the correct multiplier; the proper procedure being to use the expression

$$\frac{1}{1 + 0.0005 \times 15}$$

In computing the multipliers in the abridged table, recognition is also given to the fact that the coefficient of expansion varies with temperature and the complete expression becomes

$$\frac{1}{1 + A(T - 60° F.) + B(T - 60° F.)^2}$$

It so happens that the introduction of this secondary factor into the coefficient of expansion tends to offset the difference between the results that obtain by the simple method you outline and the method outlined above, with the result that the two methods sometimes give the same result.

I realize that the errors made by using the simpler method are extremely small; my only reason for calling them to your attention is that your inquirer might possibly notice the discrepancy in the abridged table. The values for A and B for different gravities are given in Circular No. 77 of the Bureau of Standards, and also in Fahrenheit degrees in a paper presented by R. P. Anderson before the American Petroleum Institute, Fort Worth, 1924.

The multipliers given in the abovementioned abridged table should be used in preference to computing the correction. The simple method of computation which was outlined on this page in the August 11 issue does not always give the correct answer and the exact method would be rather lengthy and tedious.

Hempel Method for Analysis of Crude Oil Outlined

What is the Hempel method for estimating the products which can be made from a given crude oil?—L. N. T.

Hempel, a well-known German chemist, modified the Engler distillation flask by extending the neck so that it would serve as a tower. It is the use of this flask which has suggested the method for making fractional distillations. The common method for the analysis of petroleum makes use of this flask, having a long neck from which there is a side tube for the escape of the hot vapors into a condenser. The long neck is filled with fine chain, iron or brass is suitable, a thermometer is fitted into the flask through a cork stopper and placed so that the top of the bulb is just below the inlet to the side tube. A proper condenser and receiving graduates should be provided together with a thermometer and a set of small hydrometers for testing the distillates.

Glass flasks up to 1 liter capacity may be used but if larger quantities of oil are to be distilled a metal still should be used. The long neck of the flask, with the vapor tube near the top, packed with the chain is a dephlegmating column, making it possible to obtain fractions that are comparable with refinery practice. Usually 800 cc. of the oil will be enough to give a good idea of the quantity and quality of the gasoline and other products. The cuts may be made either on the temperature of the vapors or the gravity of the distillates.

Full details of the Hempel method, with a complete description of the apparatus, are to be found in U. S. Bureau of Mines Bulletin 207, The Analytical Distillation of Petroleum and Its Products.

Fuel Oil Tanks Contain Deposit of Jelly-Like Substance

We purchase Bunker C fuel oil, 32-36 Diesel oil, and 18-20 fuel oil, from which we make various blends with kerosene. We have had some difficulty in blending these oils. This summer we have had several 28-30 gravity oil tanks in which a thick jelly-like substance formed near the bottom. These tanks were cleaned just before this trouble appeared. Is there any substance which will cause such a mass to accumulate?—F. M. S.

Bunker C fuel oil is a heavy oil, the highest viscosity, maximum 300 seconds at 122° F., Saybolt Furol, specified by the Federal Specifications Board for the purchase of fuel oils for use of the Government. In fact all of the fuel oils mentioned in the U. S. Government specifications are graded on the basis of viscosity with no mention of pourpoint, so some oils of the grades mentioned may contain large quantities of amorphous wax. No doubt some residuals containing practically all of the paraffin wax present in the crude oil, may be furnished meeting the specifications. The addition of kerosene to oils of this type may sufficiently dilute the oil to permit separation of the wax which, if the tank were not disturbed for a reasonable period, would tend to collect in the lower part of the tanks. Slight heating, with further mixing will restore the oil to the original condition.

The blending of fuel oils is not difficult if the tanks are equipped with steam coils so that the oils may be heated to a temperature high enough to cause them to flow easily. When the different oils have been brought to an easily flowing condition and the predetermined quantities run into a tank, a satisfactory blend may be obtained by circulating the entire body of oil out and into the tank through a pump. When the properties of the different oils are well known, the mixing may be made by blowing with compressed air. This is liable to cause some difficulty through oxidation when the stocks represent different crude oils and different methods of refining.

The addition of kerosene to a heavy asphaltic oil may cause some deposition of asphalt, which would appear in a fuel oil mixture as a thick jelly-like mass, and the separation of amorphous wax would produce a similar deposit. These are the only conditions which, so far as I know, could be responsible for the accumulations mentioned.

Specifications for Lubricants Supplied by Distributors

We are endeavoring to locate a publication that will show the manufacturer's recommendations or specifications of lubricants for engines, transmissions and differentials for each type of passenger car, truck, bus, motor coach, fire fighting equipment, ambulance, tractor and airplane.—J. M. M.

Practically all of the major oil companies issue rather complete charts containing their recommendations for the use of their lubricants. Each automobile company publishes instructions for lubrication.

The oil companies, sales departments will be glad to supply the charts to those interested and the instructions may be obtained from the local dealers handling automobiles and trucks.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing or transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

When May Wells in East Texas Be Expected to Go on Pump?

We are interested in getting an opinion as to the approximate time when the East Texas oil field wells will have to go on the pump. What kind of pumping units will be used when the wells are produced by mechanical means, and what percentage of the units will be driven by gas engines and by electric motors?—A. F. C.

Petroleum geologists and engineers say it is impossible to foretell with any semblance of definiteness when the change from flowing to pumping conditions will take place in East Texas. With such a vast area and so many thousands of wells rapid change would not be expected.

However, no one knows when his lease will reach that low bottom-hole pressure which will make it necessary to produce it by mechanical means. Bottom-hole pressures are being taken by a number of the major companies and they show a steady decline of 5 to 9 pounds per month. At this time it is probable that the average for the field is about 1,400 pounds and it has been estimated that these wells will flow until a bottom-hole pressure of 850 pounds is reached.

It is easy to calculate that if the maximum rate of decline in bottom pressures is 9 pounds per month and it is necessary for the pressures to decline 550 pounds before the wells will have to go on the pump it will be five years until that condition is established.

On the other hand, it is known that with the production of 175,000,000 bbls. of oil to date there has been a decrease in bottom-hole pressure of 250 pounds, or from the original estimated pressure of 1,650 pounds to the present 1,400 pounds.

If it has required 250 pounds of energy to produce 175,000,000 bbls. of oil this simple equation can be constructed:

250 : 175,000,000 : : 550 : x

and the answer is 385,000,000 bbls. of oil. At the rate of 325,000 bbls. per day or approximately 10,000,000 bbls. per month this would mean a flowing life of three years 2.5 months.

The above figures contemplate handling the field as a unit with every portion of it acting the same as every other portion. But this not and cannot be the case, so the figures prove little or nothing.

The problem resolves itself into the attitude of the individual leaseowner as to what he must and will do. And that is really the answer to your question because this field is too big to generalize about and when you have to deal with 700 different interests you know you have 700 different answers.

In some parts of the field during rainy weather it is impossible to get to locations for weeks at a time, and if an operator's wells should go off natural flow at such a time his loss from shutdown would probably be heavy. For this reason it is said many now are installing pumping equipment as a precaution against forced shutdowns in such periods.

There is no way of estimating the percentage of wells that will be pumped by the various methods, nor the number that will use gas engines or electric motors. Sales efforts probably will have much to do with this matter along with the individual attitude of the operator. You should find of interest an article in the April 14, 1932, issue of The Oil and Gas Journal, "East Texas Pumping Requirements," by Ritter and Johnston.

Who Should Receive Credit for Opening Oklahoma City Pool?

Who was responsible for bringing in the Oklahoma City Field? If it was a geologist, what was his name? If it was a driller, tell me who it was and what his geological background was. If it was a capitalist, let me know who that master mind was and what geologist or petroleum engineer guided his decision.—J. L. W.

The following information is taken from Oklahoma Geological Survey Bulletin No. 40 and based upon the personal investigation of Dr. Charles N. Gould, former director of the survey.

The first well drilled for oil in Oklahoma County which reached a depth of over 500 feet was located one-fourth mile south of Spencer. The company which financed the well was organized by E. J. Streeter, a hardware merchant in Oklahoma City, who was the active member of the organization. L. C. Hivick was the contractor. The well was drilled in 1903 and reached a reported depth of 2,002 feet.

From time to time other wells were drilled in Oklahoma and adjoining counties. Six wells were drilled in Oklahoma County and are reported in Bulletin 19, part 2, Oklahoma Geological Survey, published in 1917.

All these wells were located without geological advice and for the most part were drilled by promoters and financed by local capital.

The two geologists who first observed a favorable oil structure near Oklahoma City were probably George D. Morgan and Jerry B. Newby. The exact dates when these first observations were made seem to have been lost. Morgan says, "In either 1917 or 1919, and I cannot remember which year, I worked out the structure at Oklahoma City." Everett Carpenter, to whom Mr. Morgan referred, was of the opinion it was about 1917. Mr. Newby said "My work north and northeast of Oklahoma City was done in the early part of 1919."

L. E. Trout, in the fall of 1919 made a reconnaissance of the area and "late in 1920 or early in 1921," mapped an area in southern Oklahoma and northern Cleveland counties in what is now the southern part of the Oklahoma City Field. This seems to have been the first structure map prepared of the region. With Mr. Trout were associated S. H. Woods, Claude Dalley and L. R. Trout. In 1925 a well located by Mr. Trout in Section 36-11n-2w, near the Cleveland County line, was drilled to a depth of 4,480 feet. Several minor shows of oil were reported.

In 1925 John R. Bunn worked out a surface high north of the State Capitol and a deep test (7,180 feet) drilled by Cromwell-Franklin's No. 1 Thompson, SE NE Section 15-12n-2w, found water in the Wilcox. This well had several minor shows in shallower horizons. An earlier well drilled not far away is the discovery well of Oklahoma County.

E. A. Paschal in 1926, while employed by the Coline Co., traced the Hennessey-Garber contact and recognized the presence of a fold south of Oklahoma City. Upon the recommendation of C. T. Moore, then chief geologist of the company, three leases were purchased in the area, all of which are now producing.

So the presence of a structure lying north, northeast and southeast of Oklahoma City had been a matter of general geologic knowledge for several years, and a number of geologists not mentioned here noted the structure at various times.

In 1927 Dr. G. E. Anderson, working independently while doing reconnaissance work for the Indian Territory Illuminating Oil Co., reported a southward projecting nose running through Oklahoma City. He outlined this nose on the Garber-Hennessey contact, and it is shown in the surface geologic map accompanying this report. (Map No. XXXIX). Following Mr. Anderson's report, the detailed geology of Townships 10 and 12n, Ranges 2 and 3w, was structurally mapped for the geological department of the Indian Territory Illuminating Oil Co. in February, 1928, by C. L. Wagner, under the supervision of J. H. Derden and C. W. Roop, and this work was approved by R. J. Riggs, chief geologist.

The Indian Territory Illuminating Oil Co. then blocked approximately 10,000 acres on this structure. A location was made in the SE SE Section 24-11n-3w and drilling began in June, 1928. This well had several showings, the most important ones being 3,997 to 4,012 feet, where 25,000,000 feet of gas was encountered, and another at 4,805 to 4,816 feet where 47,000,0 0 feet of gas was encountered. Passing out of Pennsylvanian rocks at 6,100 feet, the well went into Ordovician and was completed as a producer of approximately 5,000 bbls. of 39-degree oil per day, at a depth of 6,355 feet to 6,498 feet in a porous dolomite. This producer, completed December 4, 1928, started a tremendous drilling campaign and the Oklahoma City Field resulted.

A copy of this bulletin can be obtained from the Oklahoma Geological Survey, Norman, Okla.

Why Was It Called That?

COACH

No swift automobile or airplane carried the early oil man from one field to another. If he could not go by train (and often he could not), he was likely to make the trip in a stagecoach, the designation given to a horse-drawn coach which carried passengers between certain stations. The coach got its name from the village of Kocs, in Hungary, once known for its manufacture of a peculiar type of wooden four-wheeled vehicle. According to a story handed down, the villagers of Kocs, to show their devotion to their king, sent him one of their vehicles, to which he referred later as "that thing from Kocs." The vehicle itself came to be called in the Hungarian tongue a kocsi. The Germans adopted the name "kutsche," from which the French derived their "coche." From this latter the English "coach" was obtained. The first coach made in England was one manufactured in 1555 by Walter Rippon for the Earl of Rutland.

Methods Used in Getting Records of Bottom-Hole Pressures

It has come to my attention that petroleum engineers in the Mid-Continent Field are becoming increasingly interested in bottom-hole pressure records. Can you give me some idea as to apparatus and methods used to obtain these records? Any information as to conditioning of holes, depths at which records have been taken, practical use made of such information, etc., will be much appreciated.—W. G. B.

The following articles which have appeared in The Oil and Gas Journal are believed to contain the information you seek concerning bottom-hole pressure instruments and practice:

"Measuring Bottom-Hole Pressure Important," H. D. Wilde, Jr., Humble Oil & Refining Co., June 16, 1932.

"Bottom-Hole Pressure Interpretations" E. V. Foran, April 21, 1932.

"Review of Progress in Engineering," L. G. E. Bignell, July 30, 1931.

"Sand Pressure Control in East Texas," Harold Vance and Verne Fagin, October 22, 1931.

"Tulsa A.I.M.E. Meeting Discusses Bottom-Hole Pressure Problems," May 21, 1931.

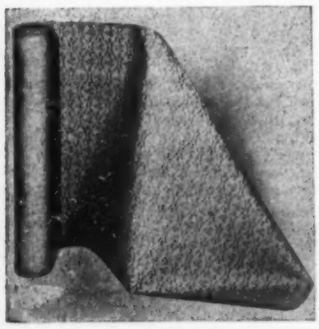
"Bottom-Hole Pressures in Oil Wells," C. V. Millikan and Carroll V. Sidwell, May 14, 1931.

"Electric Balance Measures Oil-Well Pressure and Temperature," John H. Payne, June 25, 1931.

NEW AND IMPROVED EQUIPMENT

Packing for Special Uses Is Announced by Garlock

The Garlock Packing Co., Palmyra, N. Y., announces Garlock 660, a new sheet packing for gasoline, oil and water. Garlock 660 is produced by a new proc-



ess which combines granulated cork with tough paper fibre into a gasketing material. The high percentage of cork particles is said to give the packing resiliency and softness. The strong paper fiber adds toughness and durability. A liquid proof compound binds together the scientifically proportioned mixture of these two materials. The packing is said to be soft enough to seal flanges or joints which may be imperfectly machined or in poor condition, and tough enough to permit its use in paper thicknesses on installations requiring very thin gaskets. The manufacturer says it will not shrink, crack, curl or become brittle in stock.

This packing is said to cut clean and easily in any thickness, thus making it a desirable material for gasketing jobs. It is manufactured in all standard thicknesses from .010 inch to one-half inch. In thicknesses less than one-eighth inch it can be supplied in rolls 36 inches wide, or in sheets. In one-eighth inch and greater in thickness it is furnished in sheets 36 inches square. Gaskets cut from Garlock 660 sheet are styled Garlock 661. They are furnished in any size, shape or quantity to specifications.

Nugent Making Portable Oil Filter and Oil Pump

A portable combination oil filter and motor driven oil pump, announced by William W. Nugent & Co., Inc., 410 North Hermitage Avenue, Chicago, has many uses where a permanent oil filtering system installation is impractical or too expensive an investment, for instance small gear reduction units, engines, pumps, compressors and other machinery having oil reservoirs.

The suction of the pump may be connected by flexible metal hose or regular piping to the dirty oil drain in the dirty oil reservoir of oil to be filtered. The discharge likewise is connected to the inlet of the reservoir. The filtering process starts by plugging the motor wire to any electric light socket and turning on the current.

The filtering process does not interfere with the continuous operation of the machine to which it is connected.

After the oil in a machine is filtered, the portable filtering unit may be carried to another machine and so on. The time required for filtering depends upon the dirty condition of the oil, the quantity and viscosity. In some cases 20 minutes is sufficient, in others an hour.

Several sizes of filtering units are manufactured, ranging from 65 to 2,000 gallons per hour.

Among the Equipment Houses

Roots - Connersville - Wilbraham, Connersville, Ind., manufacturers of rotary positive and centrifugal types of blowers and pumps, report September orders booked were 43½ per cent greater than the total for July, 26½ per cent greater than the total for August and 32 per cent better than the total for September, 1931.

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Domestic sales for the American Liquid Meter Co., manufacturer of Bassler liquid meters, has been taken over by the U. S. Thermo Meter Co., 8811 West Third Street, Los Angeles, Calif. The new organization, headed by A. J. Rogers, president, is particularly interested in the development of the Bassler-U. S. Thermo meter.

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Max E. Landy, who represents the Ideal Electric Manufacturing Co., Mansfield, Ohio; Reeves Pulley Co., Columbus, Ind.; Foote Bros. Gear & Machine Co., Chicago; Dodge Manufacturing Corp., Mishawaka, Ind. (D-V belts), and the Pennsylvania Transformer Co., Pittsburgh, Pa., has moved from Oklahoma City to Tulsa, where his address is 733 Mayo Building.

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The American Meter Co., Inc., has acquired Westcott & Greis, Inc., who have acted as sales agents for American Meter Co. products in the Mid-Continent Field. The present sales service in Tulsa and in Dallas and Houston, Tex., will be continued. Control of Westcott & Greis by American Meter Co. is a further step in completely integrating this company's sales organization under centralized management from coast to coast.

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The Baldwin Locomotive Works, Philadelphia, Pa., and subsidiary companies have been licensed by the Dardelet Threadlock Corp., to manufacture for their own use bolts, nuts and other parts threaded with the Dardelet self-locking thread.

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F. J. Rudd has been appointed managing engineer of the motor department of the General Electric Co.'s River works in Lynn, Mass. He succeeds L. E. Underwood, who has been made manager of the Pittsfield, Mass., works.

FURNACE OUTPUT IS STEPPED UP

To meet the demands for General Electric's latest household product, the oil-burning furnace, an order was placed on the factory early in October increasing immediately the production 50 per cent on furnaces to be manufactured from then until the first of the year, according to J. J. Donovan, manager of the company's air conditioning department. The boilers will be built in the Pittsfield plant and the compressors and control equipments in the Schenectady factory. The new furnace is not being nationally distributed this season, sales being limited to about 25 important cities along the Atlantic Seaboard, extending from Washington, D. C., to Portland, Me.

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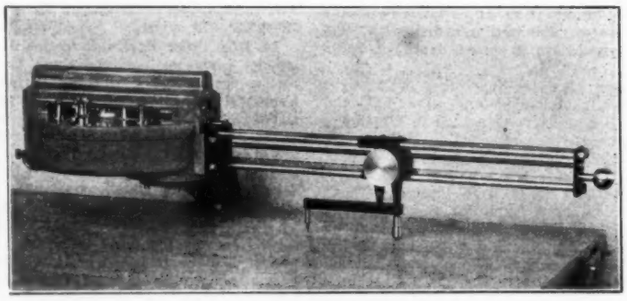
The Mission Sales Co., Houston, Tex., is distributing a bulletin presenting details concerning Mission valves.

New Geophysical Instrument Announced by Askania



The American Askania Corp., 809 M. and M. Building, Houston, Tex., has announced a new integrometer for geophysical work. The purpose of the instrument is to determine fast and accurately gradients of gravity as well as other gravity data by simple integration of a cross-section through an interesting area. Need for such an instrument had existed for a long time since it is tedious to do computations in the usual manner, with the aid of tables. In addition the human element made the possibility of error always present in such computation methods.

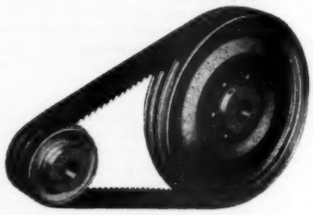
The instrument consists of a large round casing resting on a rotary base. An arm is attached to the instrument so that the working range covers a large area. Knobs and counting disks are provided for a proper setting of the apparatus. The arm attached to the casing is equipped with a rotary hand which is led by the operator around a cross-section, thus making the proper operation of the instrument possible. The whole instrument is made compact to minimize the danger of damage and deterioration.

The Askania integrometer is particularly applicable for torsion balance and pendulum work. It will be useful for checking qualitative interpretation of gravity data by quantitative computation. The accuracy obtainable is about 5 per which must be considered satisfactory for this type of work. The instrument will be of special advantage to an operating company with small geophysical staff and of course for large geophysical departments where much material is available and has to be checked and interpreted carefully.

Dayton Rubber Announces Line of V-Groove Pulleys

The Dayton Rubber Manufacturing Co., Dayton, Ohio, maker of Dayton cog-belt drives, announces a new line of "Day-Steel" single and multiple V-groove pulley for use with Dayton cog-belts, for ratings of 7½-horsepower and below.

These new "Day-Steel" pulleys are



said not only to effect a saving in cost but to be lighter in weight, making them especially suitable for machines requiring these smaller horsepowers. They are accurately formed from heavy-gauge pressed steel for maximum strength strongly welded at both the rim and the web and rigidly assembled with a hub of unique construction to give an accurately balanced and true running pulley.

A high quality aluminum finish adds much to the appearance of the product. Complete engineering and price data are given in bulletin No. 110, sent on request.

Gas or Gasoline Can Be Used by Drilling Engine

The Riise Engineering Co., Columbiana, Ohio, says it has built strength and ruggedness into the Riise drilling engine using high-grade alloy steels and ball and roller bearings, along with unusually large dimensions and proportions to provide the greatest margin of safety.

All engines are sent out with a natural gas valve, together with a gasoline carburetor. The gas valve is so made that it will mix air and gas in the same proportion at any speed, from low throttle to wide open. It also can be adjusted for variation in gas pressure by turning an adjusting screw. To change from natural gas to gasoline, it is only necessary to hook up a one-quarter inch control rod with a small screw to the telegraph cord control wheel.

The pulley shaft, being set at right angles with the motor, makes it possible for this power unit to be set in the same manner as a steam engine, with a power take-off from both sides. The power take-off housing is a large steel casting, on to which the pulley is mounted on two Timken bearings of unusually large proportion, with the drive shaft full floating. The six-cylinder motor gives a flexible power and therefore a good drilling motion to the tools.

The two speeds forward and one reverse are obtained by sliding one gear, with all control operations performed from the derrick floor. The speed reduction of the reverse gear is the same as for the direct forward speed. The low speed is geared down to half the speed with double the power of the direct forward gear, which is said to make an excellent combination on a fishing job, sticking tools or for setting or pulling of pipe in deep holes.

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The Babcock & Wilcox Co. has been awarded a contract by the Potomac Electric Power Co., Washington, D. C., for two complete boiler units, each having a capacity of 375,000 pounds of steam per hour.